Manitowoc

R Model
Flake & Nugget

Technician's Handbook

This manual is updated as new information and models are released. Visit our website for the latest manual.
www.manitowocice.com

America's #1 Selling Ice Machine

Part Number 000007661 6/12

Safety Notices

As you work on Manitowoc equipment, be sure to pay close attention to the safety notices in this handbook. Disregarding the notices may lead to serious injury and/or damage to the equipment.

Throughout this handbook, you will see the following types of safety notices:

⚠ Warning

Text in a Warning box alerts you to a potential personal injury situation. Be sure to read the Warning statement before proceeding, and work carefully.

⚠ Caution

Text in a Caution box alerts you to a situation in which you could damage the equipment. Be sure to read the Caution statement before proceeding, and work carefully.

Procedural Notices

As you work on Manitowoc equipment, be sure to read the procedural notices in this handbook. These notices supply helpful information which may assist you as you work.

Throughout this handbook, you will see the following types of procedural notices:

Important

Text in an Important box provides you with information that may help you perform a procedure more efficiently. Disregarding this information will not cause damage or injury, but it may slow you down as you work.

NOTE: Text set off as a Note provides you with simple, but useful, extra information about the procedure you are performing.

Read These Before Proceeding:

⚠ Caution

Proper installation, care and maintenance are essential for maximum performance and trouble-free operation of your equipment. Visit our website www.manitowocfsg.com for manual updates, translations, or contact information for service agents in your area.

Important

Routine adjustments and maintenance procedures outlined in this handbook are not covered by the warranty.

⚠ Warning

Read this manual thoroughly before operating, installing or performing maintenance on the equipment. Failure to follow instructions in this manual can cause property damage, injury or death.

⚠ Warning

Do not use electrical appliances or accessories other than those supplied by Manitowoc for your ice machine model.

⚠ Warning

Two or more people or a lifting device are required to lift this appliance.

⚠ Warning

This equipment contains high voltage electricity and refrigerant charge. Installation and repairs are to be performed by properly trained technicians aware of the dangers of dealing with high voltage electricity and refrigerant under pressure.The technician must also be certified in proper refrigerant handling and servicing procedures. All lockout and tag out procedures must be followed when working on this equipment.

⚠ Warning

Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.

⚠ Warning

Do not operate equipment that has been misused, abused, neglected, damaged, or altered/modified from that of original manufactured specifications. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision concerning use of the appliance by a person responsible for their safety. Do not allow children to play with this appliance.

⚠ Warning

All covers and access panels must be in place and properly secured, before operating this equipment.

⚠ Warning

Do not obstruct machine vents or openings.

⚠ Warning

Do not store gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

⚠ Warning

Do not clean with water jet.

⚠ Warning

It is the responsibility of the equipment owner to perform a Personal Protective Equipment Hazard Assessment to ensure adequate protection during maintenance procedures.

⚠ Warning

Two or more people are required to move this equipment to prevent tipping.

⚠ Warning

When using electric appliances, basic precautions must always be followed, including the following:

a. Read all the instructions before using the appliance.
b. To reduce the risk of injury, close supervision is necessary when an appliance is used near children.
c. Do not contact moving parts.
d. Only use attachments recommended or sold by the manufacturer.
e. Do not use outdoors.
f. For a cord-connected appliance, the following must be included:
   - Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
   - Unplug from outlet when not in use and before servicing or cleaning.
   - Do not operate any appliance with a damaged cord or plug, or after the appliance malfunctions or is dropped or damaged in any manner. Contact the nearest authorized service facility for examination, repair, or electrical or mechanical adjustment.
g. Follow applicable lock out tag out procedures before working on equipment.
h. Connect to a properly grounded outlet only.

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Model Numbers

SELF CONTAINED AIR & WATER-COOLED MODELS

Flake Models			
Self Storage Air-Cooled	**Self Storage Water-Cooled**	**Modular Air-Cooled**	**Modular Water-Cooled**
RF0244A	–	–	–
RF0266A	–	–	–
RF0385A	–	–	–
RF0388A	–	–	–
RF0399A	–	–	–
–	–	RF0300A	–
–	–	RFS0300A	–
–	–	–	–
–	–	RF0650A	RF0650W
–	–	RF0650A	RF0650W
–	–	RF1200A	RF1200W
–	–	RFS1200A	RFS1200W
–	–	RF2300A	RF2300W
Nugget Models			
Self Storage Air-Cooled	**Self Storage Water-Cooled**	**Modular Air-Cooled**	**Modular Water-Cooled**
RNS0244A	–	–	–
RNS0308A	–	–	–
RNS0385A	–	–	–
RN0408A	–	–	–
–	–	RNS1008A	–
–	–	RN1008A	RN1009W
–	–	RN1408A	RN1409W

QUIETQUBE REMOTE AIR-COOLED MODELS WITH REMOTE CONDENSING UNITS

Flake Models	
QuietQube Head	**RCU Remote Condensing Unit**
RF1278C	RCU1075
RFS1278C	RCU1075
RF2378C	RCU2375
RFS2378C	RCU2375
Nugget Models	
QuietQube Head	**RCU Remote Condensing Unit**
RN1078C	RCU1075
RN1278C	RCU1275

RACK UNITS

Flake Models	
Head Section	**Rack Remote Condensing Unit**
RF1279R	Supplied by Others
RFS1279R	Supplied by Others
RF2379R	Supplied by Others
RFS2379R	Supplied by Others

NOTE: Rack units share a common refrigeration circuit with other equipment, such as display cases and glass door freezer displays. Rack units have been modified to function with rack systems and will not function correctly with RCU condensing units.

Model/Serial Number

These numbers are required when requesting information from your local Manitowoc Distributor, or Manitowoc Ice. The model and serial number are listed on the MODEL/SERIAL NUMBER DECAL affixed to the ice machine.

Manitowoc Cleaner and Sanitizer

Manitowoc Ice Machine Cleaner and Sanitizer are available in 16 oz. (473 ml) bottles. These are the only cleaner and sanitizer approved for use with Manitowoc products.

Cleaner Part Number		Sanitizer Part Number	
16 oz.	000000084	16 oz.	9405653
1 gal	N/A	1 gal.	9405813

Ice Machine Warranty Information

Warranty information for all ice machine models is available on our website at www.manitowocice.com.

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Installation

Installation Requirements

The location selected for the ice machine must meet the following criteria. If any of these criteria are not met, select another location.

- Air temperature:
  Flake Models - Minimum 50°F (10°C), Maximum 110°F (43°C)
  Nugget Models - Minimum 50°F (10°C), Maximum 100°F (38°C)
- The location must be free of airborne and other contaminants.
- The location must not be near heat-generating equipment or in direct sunlight.
- The location must be capable of supporting the weight of the ice machine and a full bin of ice.
- The location must allow enough clearance for water, drain and electrical connections in the rear of the ice machine.
- The location must not obstruct airflow through or around the ice machine.
- The ice machine and bin must be level.
- Routine adjustments and maintenance procedures outlined in this manual are not covered by the warranty.

Potable Water Requirements

- Plumbing must conform to local codes.
- Water temperature: Minimum 40°F (4°C), Maximum 90°F (32°C).
- Do not connect the ice machine to a hot water supply. Be sure all hot water restrictors installed for other equipment are working. (Check valves on sink faucets, dishwashers, etc.)
- If water pressure exceeds maximum pressure (70 psig [483 kPa] RN1000; 80 psig [552 kPa] for all other models) obtain a water pressure regulator from your Manitowoc distributor.
- A water shut-off valve is required to clean the ice machine.
- A union for both the ice making and condenser water lines is required.
- Water inlet lines require insulation to prevent condensation.
- RF/RFS Models: A backflow preventer is required on water inlet lines.

Drain Connections

- Drain lines must have a 1.5 inch drop per 5 feet of run (2.5 cm per meter), and must not create traps.
- The floor drain must be large enough to accommodate drainage from all drains.
- Bin drain termination must have an air gap.
- Separate insulated bin and water-cooled condenser drain lines are required.
- The bin and ice machine drains require a vent.

Ice Machine Clearance Requirements

Head Sections	Self-Contained Air-Cooled	Self-Contained Water-Cooled*	QuietQube Air-Cooled
Back	5" (12.7 cm)	5" (12.7 cm)	0" (0 cm)
Sides/Top	8" (20.3 cm)	8" (20.3 cm)	0" (20 cm)

RCU Units	Remote Condensing Unit*
Front/Back	24" (61.0 cm)
Sides/Top	6" (15.2 cm)*

* Water-Cooled Only - There is no minimum clearance required. This value is recommended for efficient operation and servicing only.

NOTE: Allowance must be made for removal when the ice machine is built-in. Monthly removal of the top panel is required for cleaning and sanitizing.

Cooling Tower Applications

A water cooling tower installation does not require modification of the ice machine. The water regulator valve for the condenser continues to control the refrigeration discharge pressure.

It is necessary to know the amount of heat rejection, and pressure drop through the condenser and water valves (inlet and outlet) when using a cooling tower on an ice machine.

- Water entering the condenser must not be lower than 37°F (3°C) or exceed 90°F (32°C).
- Water flow through the condenser must not exceed 5 gal. (19 L) per minute.
- Allow for a pressure drop of 7 psi (48 kPa) between the condenser water inlet and the outlet of the ice machine.
- Water exiting the condenser must not exceed 110°F (43°C).

Electrical Service

⚠ Warning

All wiring must conform to local, state and national codes.

VOLTAGE

The maximum allowable voltage variation is ± 10% of the rated voltage on the ice machine model/serial number plate at compressor start-up.

FUSE/CIRCUIT BREAKER

A separate fuse/circuit breaker must be provided for each ice machine. Circuit breakers must be H.A.C.R. rated (does not apply in Canada).

⚠ Warning

The ice machine must be grounded in accordance with national and local electrical codes.

GROUND FAULT INTERRUPTER CIRCUIT (GFIC)

A GFCI/GFI circuit protection is not recommended with our equipment. If a GFCI/GFI is required by code a GFCI/GFI breaker rather than outlet must be used to avoid intermittent nuisance trips.

Maintenance

Cleaning and Sanitizing

Maintenance procedures covered in this manual are not covered by the warranty.

⚠ Caution

Use only Manitowoc approved Ice Machine Cleaner (part number 000000084) and Sanitizer (part number 9405653). Do not mix Cleaner and Sanitizer solutions together. It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling. Read and understand all labels printed on bottles before use.

⚠ Warning

Wear rubber gloves and safety goggles (and/or face shield) when handling ice machine Cleaner or Sanitizer.

EXTERIOR CLEANING

Remove dust and dirt off exterior surfaces with mild household dish-washing detergent and warm water. Wipe dry with a clean, soft cloth.

RF/RFS/RNS MODELS CLEANING/SANITIZING PROCEDURES

Cleaning/Sanitizing Procedure

This procedure must be performed once every month.

- All ice must be removed from the bin
- The ice machine and bin must be disassembled cleaned and sanitized
- The ice machine produces ice with the cleaner and sanitizer solutions
- All ice produced during the cleaning and sanitizing procedure must be discarded

Procedure to Clean/Sanitize

Use Ice Machine Cleaner part number 000000084.

Use Ice Machine Sanitizer part number 9405653.

Step 1 Remove front and top covers and set the toggle switch to the OFF position.

Step 2 Remove all ice from the bin.

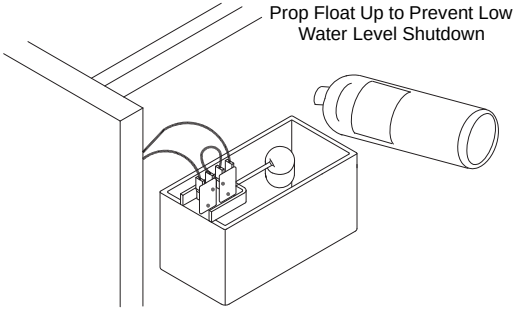
Step 3 Turn off the ice making water supply and drain water from evaporator and reservoir.

Step 4 Remove the top cover from water reservoir.

Step 5 Follow the chart and premix cleaner and water.

Amount of Water	Amount of Cleaner Part Number 000000084
1 gallon (4 Liters)	3 ounces (90 ml)

Step 6 Fill the evaporator and reservoir with cleaning solution.



Step 7 Move the toggle switch to the ON position. The ice machine will make ice with the cleaning solution and deposit the ice in the bin. Add the remaining cleaner/water solution as the water level in the reservoir drops.

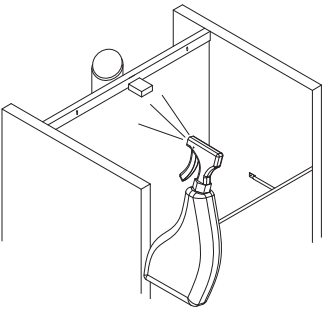
NOTE: Do not allow the cleaner/water level to drop below the minimum water level. The ice machine will discontinue the cleaning cycle if the water float switch opens.

Step 8 After all of the cleaner/water solution has been added turn on the ice making water supply. Continue the freeze cycle for 10 minutes to remove the cleaning solution from the water circuit.

Step 9 Place the toggle switch in the OFF position.

Step 10 Refer to disassembly for cleaning/sanitizing and remove parts for hand cleaning/sanitizing.

- Hand clean all parts
- Rinse all parts with clear potable water
- Sanitize all parts - do not rinse after sanitizing
- Spray all interior bin surfaces with sanitizer (do not rinse sanitized areas).
- Spray evaporator discharge spout



Step 11 Reassemble ice machine.

Step 12 Turn off the ice making water supply.

Step 13 Refer to chart and premix water and sanitizer.

Amount of Water	Amount of Sanitizer
1 Gallons (4 L) Water	1/2 ounce (15 ml)

Step 14 Fill the evaporator and reservoir with sanitizer/water solution.

Step 15 Move the toggle switch to the ON position. The ice machine will make ice with the sanitizer/water solution and deposit the ice in the bin. Add the remaining sanitizer/water solution when the water level in the reservoir drops.

NOTE: Do not allow the sanitizer/water level to drop below the minimum water level. The ice machine will discontinue the cleaning cycle if the water float switch opens.

Step 16 After all of the sanitizer/water solution has been added to the reservoir, turn on the ice making water supply.

Step 17 Continue the freeze cycle for 30 minutes and then discard all ice produced.

Heavily Scaled Cleaning Procedure

Perform this procedure if you have some or all of these symptoms.

- Excessive grinding, popping or squealing noises from the evaporator
- Grinding noise from gearbox
- Ice machine trips speed sensor

NOTE: A Cleaning/Sanitizing Procedure must be performed after this procedure.

Procedure to Clean Heavily Scaled Flake Ice Machines

Step 1 Remove front and top covers and set the toggle switch to the OFF position.

Step 2 Remove all ice from the bin.

Step 3 Turn off the ice making water supply.

Step 4 Remove the top cover from water reservoir.

Step 5 Refer to chart below:

Premix cleaner with lukewarm water in a non-metallic container.

Model	Water Reservoir Capacity	Mix Cleaner and Water Use Ice machine nickel safe cleaner, part number 000000084 only	
		Cleaner	Water
RF0244 RNS0244 RF0266 RNS0308 RF0385 RNS0385 RF0388 RF0399	14 oz (400 ml)	9 oz (266 ml)	5 oz (148 ml)
RF0300 RF0644 RF0650	17 oz (500 ml)	11 oz (325 ml)	6 oz (177 ml)
RF1200 RFS1200	34 oz (1 L)	23 oz (680 ml)	11 oz (325 ml)
RF2300 RFS2300	68 oz (2 L)	46 oz (1.3 L)	22 oz (650 ml)

Step 6 Remove all water from the evaporator and water reservoir. Add the entire cleaner/water solution and re-install the reservoir cover.
Leave the cleaner/water solution in the evaporator for a minimum of 4 hours.

Step 7 Remove all cleaner/water from the evaporator and water reservoir.

Step 8 Follow the standard cleaning and sanitizing procedures.

REMOVAL OF PARTS FOR CLEANING/SANITIZING

⚠ Warning

Disconnect electric power to the ice machine at the electric switch box and wear rubber gloves and safety goggles (or face shield) while handling cleaner or sanitizer.

⚠ Caution

Do not mix Cleaner and Sanitizer solutions together. It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling.

1. Turn off the water supply to the ice machine at the water service valve.
2. Remove the components listed on the following pages for cleaning and sanitizing.
3. Soak the removed part(s) in a properly mixed solution of cleaner and water.

Solution Type	Water	Mixed With
Cleaner	1 gal. (4 L)	16 oz (500 ml) cleaner Part Number 000000084

4. Use a soft-bristle brush or sponge (NOT a wire brush) to carefully clean the parts.
5. Use the solution and a brush or sponge to clean all disassembled components and the inside of the bin.
6. Rinse all cleaned parts with clear water.
7. Mix a solution of sanitizer and water.

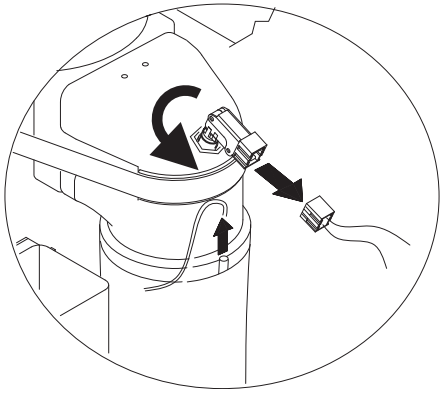
Solution Type	Water	Mixed With
Sanitizer	3 gal. (11 L)	2 oz (60 ml) sanitizer Part Number 94-0565-3

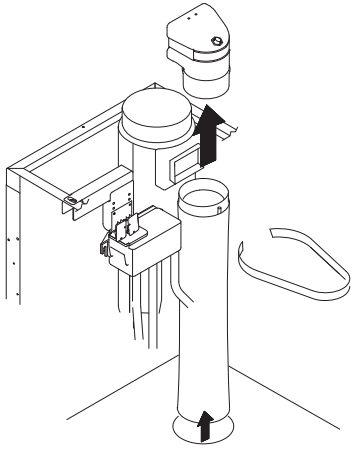
8. Soak the parts in the sanitizer/water solution for 10 minutes. Use the sanitizer/water solution and a sponge to sanitize all removed components and the inside of the bin. Do not rinse the sanitized parts.
9. Continue with step 11 of the cleaning/sanitizing procedure.

ICE CHUTE REMOVAL - RFS MODELS

RFS0300/RF0650/RF1200/RF2300

1. Place the toggle switch in the OFF position, turn off the water supply and disconnect electrical power to the ice machine.
2. Disconnect water supply.
3. Remove water reservoir cover.
4. Remove microswitch and bin thermostat from the ice chute.
5. Remove retainer, ice chute elbow and ice chute.

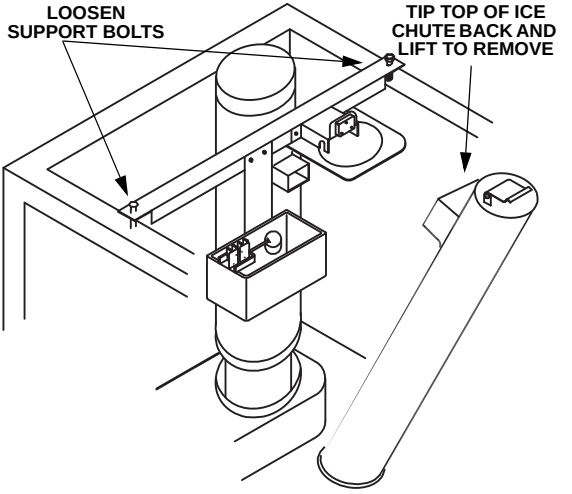




ICE CHUTE REMOVAL - RF MODELS

RFS0300/RF0650/RF1200/RFS1200/RF2300/ RFS2300

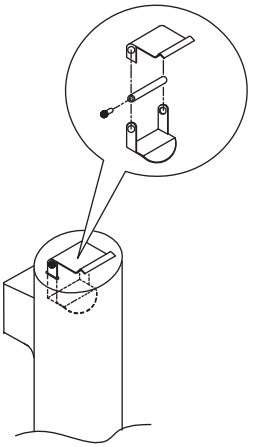
1. Place the toggle switch in the OFF position, turn off the water supply and disconnect electrical power to the ice machine.
2. Disconnect water supply.
3. Remove water reservoir cover.
4. Remove bin thermostat from ice chute.
5. Loosen bolts holding cross member.
6. Lift cross member and remove ice chute.



ICE CHUTE SWITCH ACTUATOR REMOVAL

RFS0300/RF0650/RF1200/RFS1200/RF2300/RFS2300

1. Pull to remove nylon end cap.
2. Slide pin to remove.
3. Remove both sections of the pressure switch bracket.



INCORRECT REASSEMBLY CAN RESULT IN AN ICE MACHINE THAT WILL NOT RUN

RN MODELS CLEANING/SANITIZING PROCEDURE

Use Ice Machine Cleaner part number 000000084.

Use Ice Machine Sanitizer part number 94-0565-3.

Step 1 Remove all ice from the bin/dispenser.

Step 2 Remove front and top covers.

Step 3 Mix a solution of cleaner and water.

Amount of Luke Warm Water	Amount of Cleaner Part Number 000000084
1 gallon (4 Liters)	4 ounces (120 ml)

Step 4 To start a cleaning cycle, depress the CLEAN switch to drain the water from the evaporator. Wait for the LOW WATER light to energize.

Step 5 Remove cover from the cleaning cup and add cleaner/water solution until the HI WATER light energizes, then replace cleaning cup cover. The machine will clean and then flush three times in approximately twelve minutes.

Step 6 While the ice machine is in the clean cycle, prepare for the sanitizing cycle by mixing a solution of sanitizer and water.

Amount of Luke Warm Water	Amount of Sanitizer Part Number 94-0565-3
1 gallon (4 L) Water	1/2 ounce (15 ml)

Step 7 To start a sanitize cycle, depress the clean switch to drain the water from the evaporator. Wait for the LOW WATER light to energize.

Step 8 Remove cover from the cleaning cup and add sanitizer/water solution until the HI WATER light energizes, then replace cleaning cup cover. The machine will sanitize and then flush three times in approximately twelve minutes.

Step 9 Press the OFF switch, then unscrew the ice chute connector.

Step 10 Using disposable food service grade gloves insert one dry sponge into the transport tube going to the evaporator (NOT the tube going to the bin), then insert one sponge soaked in the sanitizer water solution. With the pusher tube supplied with the sponge kit, push sponges all the way down the transport tube 16 inches (41 cm) or the length of the pusher tube.

Step 11 Reconnect chute connector and press the ON switch. Allow the ice machine to run for 10 minutes, then press the OFF switch. Catch and remove all sponges and ice from the bin/dispenser.

Step 12 Clean and sanitize the bin/dispenser:

- Disconnect power to the dispenser to prevent injury.
- Use the cleaner and sanitizer ratios from the charts on the previous page.
- Heavy accumulations of scale will require removal of components for cleaning and sanitizing.
- Rinse parts with clear water after cleaning - do not rinse parts after sanitizing.

Step 13 Spray all interior bin/dispenser surfaces with sanitizer (do not rinse sanitized areas).

Step 14 Place rocker switch in the ON position and reinstall all removed panels.

4. Lift out ice damper.
5. Remove ice deflector.
    A. Remove the two thumbscrews.

CLEANING THE CONDENSER

⚠ Warning

Disconnect electric power to the ice machine at the electric service switch before cleaning the condenser. The condenser fins are sharp. Use care when cleaning them.

Air-Cooled Condenser

Clean the condenser at least every six months. Follow the steps below.

1. Some models have a washable aluminum filter. Clean the filter with a mild soap and water solution.
2. Shine a flashlight through the condenser to check for dirt between the fins. Blow compressed air through the condenser fins from the inside or use a commercial condenser coil cleaner. Follow the directions and cautions supplied with the cleaner.
3. Straighten any bent condenser fins with a fin comb.
4. Carefully wipe off the fan blades and motor with a soft cloth. Do not bend the fan blades. If the fan blades are excessively dirty, wash with warm, soapy water and rinse thoroughly.

⚠ Warning

If you are cleaning the condenser fan blades with water, cover the fan motor to prevent water damage.

Removal from Service/Winterization

⚠ Caution

If water is allowed to remain in the ice machine in freezing temperatures, severe damage to some components could result. Damage of this nature is not covered by the warranty.

Follow the procedure below.

1. Disconnect the electric power at the circuit breaker or the electric service switch.
2. Turn off the water supply.
3. Disconnect and drain the incoming ice-making water line at the rear of the ice machine.
4. Disconnect drain tubing and drain water into container and discard.
5. Make sure water is not trapped in any of the water or drain lines.
6. Water cooled - Use compressed air to remove all water from the condenser.

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Ice Making Sequence of Operation

NOTE: Flake ice machines use an auger to remove ice from the evaporator. Occasional noises (creaks, groans, squeaks, or pops) are a normal part of the ice making process.

RF0244/RNS0244/RF0266/RF0385/RFS0385/ RNS0385/RF0388/RF0399

Self-Contained Air-Cooled

When the toggle switch is placed in the “ON” position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Low Evaporator Temperature Thermostat

C. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor and refrigeration system. The float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine will restart when ice no longer contacts the bin thermostat.

NOTE: Refer to electrical flowchart for “RF0244/ RNS0244/RF0266/RF0385/RFS0385/RNS0385/ RF0388/RF0399 Air & Water” on page 52 for Sequence of Operation detail.

RF0300/RFS0300

Self-Contained Air-Cooled

When the toggle switch is placed in the “ON” position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Low Evaporator Temperature Thermostat

C. Ice Chute Safety Switch

D. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor and a 10 minute compressor time delay. The compressor starts and the float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

NOTE: Refer to electrical flowchart for “RF0300/RFS0300 Air & Water” on page 57 for Sequence of Operation detail.

RF0644/RF0650/RF1200/RFS1200/RF2300/ RFS2300

Self-Contained Air-Cooled

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. High Pressure Cut-out Switch

C. Ice Chute Safety Switch

D. Low Pressure Switch

E. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the compressor starts.The ice machine will continue to make ice until ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

NOTE: Refer to electrical flowchart for “RF0644/ RF0650/RF1200/RFS1200/RF2300/RFS2300 Air & Water” on page 62 for Sequence of Operation detail.

RF1200C/RF2300C

QuietQube Remote Air-cooled Models with Remote Condensing Unit

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. High Pressure Cut-out Switch

C. Ice Chute Safety Switch

D. Low Pressure Switch

E. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the liquid line solenoid valve opens.

- When the refrigerant pressure is high enough to close the low-pressure control the contactor coil energizes and the compressor starts.
- The refrigerant pressure will increase and close the fan cycling pressure control and the condenser fan motor starts.

The ice machine will continue to make ice until ice contacts the bin thermostat and the liquid line solenoid valve closes and the refrigeration system pumps down.

- The refrigerant pressure drops and the fan cycling pressure control opens stopping the condenser fan motor.
- When the refrigerant pressure is low enough to open the low pressure control, the contactor coil is de-energized and the compressor stops.

The ice machine remains off until ice no longer contacts the bin thermostat.

NOTE: Refer to electrical flowchart for “RF1200C/RFS1200C QuietQube Remote” on page 67 and “RF2300C/RFS2300C QuietQube Remote” on page 79 for Sequence of Operation detail.

RF1200C/RF2300C

Head Section with Rack Refrigeration system

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Ice Chute Safety Switch

C. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the liquid line and suction solenoid valves energize.

The ice machine will continue to make ice until ice contacts the bin thermostat and the liquid line and suction solenoid valves close.

The ice machine remains off until ice no longer contacts the bin thermostat.

NOTE: Refer to electrical flowchart for “RF1200C/RFS1200C QuietQube Remote” on page 67 and “RF2300C/RFS2300C QuietQube Remote” on page 79 for Sequence of Operation detail.

RN0400

Self-Contained Air-cooled & Water-Cooled

NOTE: Ice machines use an auger to remove ice from the evaporator. Occasional noises (creaks, groans, squeaks, or pops) are a normal part of the ice making process.

Operation

The ice machine will not start until:

A. The compressor rocker switch is moved to "ON".

B. Ice does not contact the bin thermostat bulb.

C. The water reservoir is full of water.

With power supplied and the compressor rocker switch in the ON position, the gear motor and refrigeration system start. The float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. A 20 minute delay period initiates. The ice machine will restart when ice no longer contacts the bin thermostat and the 20 minute delay period expires.

NOTE: Refer to electrical flowchart for "RN0400 Air & Water" on page 86 for Sequence of Operation detail.

RN1000/RN1400

Self-Contained Air-Cooled & Water-Cooled

NOTE: Ice machines use an auger to remove ice from the evaporator. Occasional noises (creaks, groans, squeaks, or pops) are a normal part of the ice making process.

Operation

The ice machine will not start until:

A. The rocker switch is moved to ON.

B. The transport tube shuttle switch is closed.

C. The water reservoir is full of water.

Placing the toggle switch in the ON position starts the gear motor and refrigeration system. The water level sensor controls the water inlet valve and water level. The freeze cycle ends when ice contact opens the transport tube switch. A 60 minute time delay period initiates. The ice machine will restart when the ice transport tube switch closes and the 60 minute time delay period expires.

Flush Cycle

The ice machine will automatically flush the evaporator.

The refrigeration system will shut down and the gear motor will continue to run. After the flush is complete, the machine will refill and start the refrigeration system without a time delay.

NOTE: Refer to electrical flowchart for “RN1000/ RN1400 Air & Water” on page 91 for Sequence of Operation detail.

RN1000C/RN1200C

QuietQube Remote Air-cooled Model with Remote Condensing Unit

NOTE: Ice machines use an auger to remove ice from the evaporator. Occasional noises (creaks, groans, squeaks, or pops) are a normal part of the ice making process.

Operation

The ice machine will not start until:

A. The rocker switch is moved to ON.

B. The transport tube switch is closed.

C. The water reservoir is full of water.

Placing the toggle switch in the ON position starts the gear motor and energizes the liquid line solenoid valve. The refrigerant pressure at the condensing unit increases and the low pressure switch closes and starts the refrigeration system. The water level sensor controls the water inlet valve and water level. The freeze cycle ends when ice contact opens the transport tube switch. The liquid line solenoid valve closes and the refrigerant pressure at the condensing unit drops. The low pressure switch opens and turns off the refrigeration system. A 60 minute time delay period initiates. The ice machine will restart when the ice transport tube switch closes and the 60 minute time delay period expires.

NOTE: Refer to electrical flowchart for “RN1000C/ RN1200C QuietQube Remote” on page 99 for Sequence of Operation detail.

Ice Production/Quality Check

QUALITY CHECK

Ice quality varies with ambient and water temperatures, and is measured by the amount of water in the ice. Generally speaking, higher incoming water temperature results in lower ice quality. Lower water temperature results in higher ice quality.

ICE PRODUCTION CHECK

NOTE: Ice production checks that are within 10% of the charted capacity are considered normal due to variances in air and water temperatures. Actual temperatures will seldom match the chart exactly.

1. Run the ice machine a minimum of 10 minutes to allow the system to stabilize.
2. Catch the ice in a non-perforated container for 7 minutes and 12 seconds or for more accuracy 14 minutes and 24 seconds.
3. Weigh the container and ice, then deduct the weight of the container.
4. Convert ounces to pounds.
5. Example: 3 lbs. 12 oz. converts to 3.75 lbs.
6. (12 oz. ÷ 16 oz. =.75 lb.)
7. Determine the 24-hour ice production capacity.
    A. 7 minutes 12 seconds = Multiply the total ice weight by 200.
    B. 14 minutes 24 seconds = Multiply the total ice weight by 100.

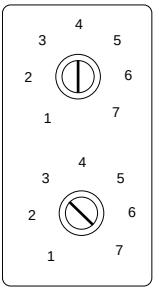
Thermostat Settings

Bin Thermostat:

The bin thermostat sensing bulb is located in the ice chute on modular models and in the bin thermostat holder on the right side of the bin on self storage models. The bin thermostat turns the ice machine on and off as the level of ice in the bin changes. Use the initial setting from the chart and adjust as required.

Evaporator Low Temperature Safety Thermostat:

The evaporator low temperature safety thermostat protects the ice machine if the evaporator temperature is too cold. Refer to chart for correct setting.



Bin Thermostat
Small Numbers = Less ice in bin
Large Numbers = More ice in bin
Start at Chart Setting, then adjust as required

Evaporator Low Temperature Safety Thermostat
Refer to chart for setting
Incorrect settings will cause ice machine to shut off prematurely

Thermostat Setting Chart

Model	Bin Thermostat Setting	Evaporator Thermostat Setting
RF0244/RNS0244/RF0266/ RF1200/RFS1200/RF2300/ RFS2300	5	5
RF0385 RNS0385/RF0388/ RF0399/RF0644	5	7
RF0300/RFS0300/RF0650	4	7

Troubleshooting

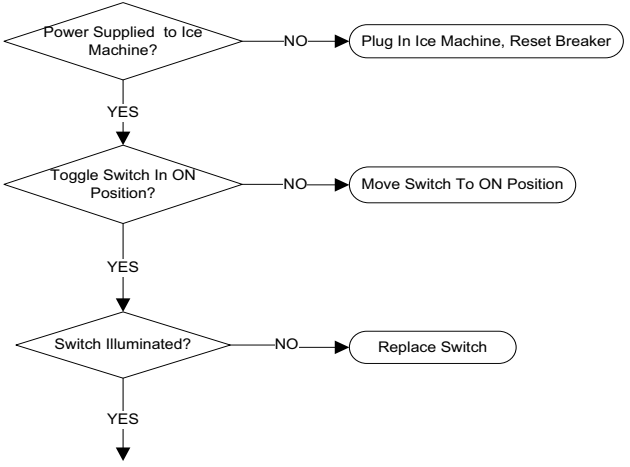
Electrical Flowcharts

Diagnostic troubleshooting for the ice machine involves following flowcharts that are dependant on symptoms of the failed machine.

Follow the flowcharts for the failure symptom and model you are working on.

NOTE: Refer to the sequence of operation to determine where in the sequence the ice machine has failed. An example would be an ice machine that energizes the gear motor, but the compressor does not energize. Following the electrical flowchart will quickly and easily eliminate non issues.

Electrical Flowchart - RF0244/RNS0244/RF0266/RF0385/RFS0385/ RNS0385/RF0388/RF0399 AIR & WATER



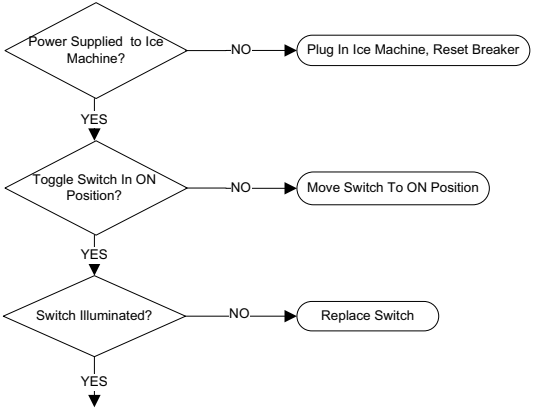
YES
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
No
Adjusting Closes Thermostat?
No
Replace Thermostat
Yes
Remove Ice - Allow To Warm And Retest
Yes
Verify New Setting Cycles Machine On/Off
YES
Evaporator Safety Thermostat Closed?
NO
Evaporator Cold?
No
Adjusting Closes Thermostat?
No
Replace Thermostat
Yes
Allow Evaporator To Warm And Retest
Yes
Verify New Setting Cycles Machine On/Off
YES

YES
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES

Gear Motor Runs?
NO
Line Voltage To Gear motor?
Yes
Remove Auger From Evaporator
Gear Motor Runs?
No
Replace Gear Motor
No
Repair Wiring
Yes
YES
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Evaporator
Line Voltage To Compressor Relay Coil?
NO
Wiring From Gearmotor Intact?
Yes
Replace Gear Motor
No
Repair Wiring
YES

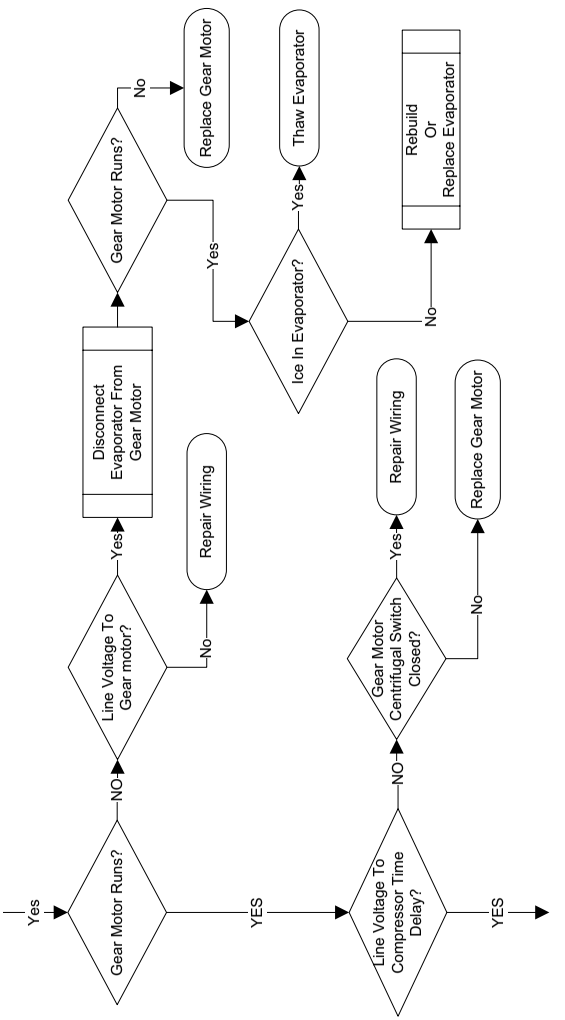
YES
Relay Closed?
NO
Replace Relay
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

Electrical Flowchart – RF0300/RFS0300 Air & Water



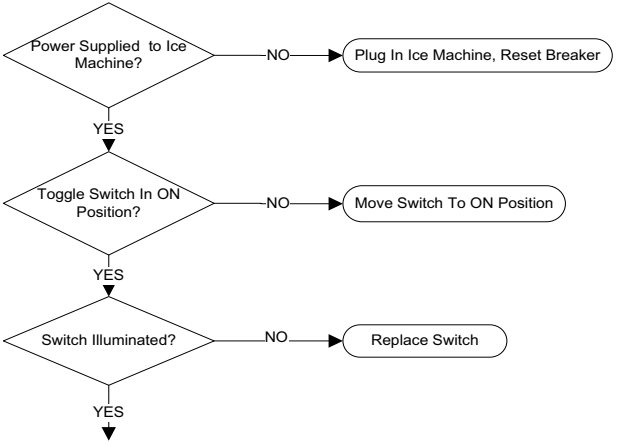
Yes
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
No
Adjusting Closes Thermostat?
No
Replace Thermostat
Yes
Remove Ice - Allow To Warm And Retest
Yes
Verify New Setting Cycles Machine On/Off
YES
Evaporator Safety Thermostat Closed?
NO
Evaporator Cold?
No
Adjusting Closes Thermostat?
No
Replace Thermostat
Yes
Allow Evaporator To Warm And Retest
Yes
Verify New Setting Cycles Machine On/Off
YES
Chute Switch Closed?
NO
Ice Contacting Actuator?
No
Actuator Functions?
No
Adjust Or Replace Actuator
Yes
Remove Ice And Retest
Yes
Replace Switch
Yes

YES
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES


Yes
Gear Motor Runs?
NO
YES
Line Voltage To Gear motor?
Yes
No
Repair Wiring
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
No
Replace Gear Motor
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Or Replace Evaporator
Line Voltage To Compressor Time Delay?
NO
YES
Gear Motor Centrifugal Switch Closed?
Yes
Repair Wiring
No
Replace Gear Motor

Yes
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
Yes
Line Voltage To Compressor Contactor Coil?
NO
Install Compressor Time Delay Jumper
Power To Contactor Coil?
No
Repair Wiring
Yes
Replace Time Delay Relay
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

Electrical Flowchart – RF0644/RF0650/RF1200/RFS1200 RF2300/RFS2300 AIR & WATER



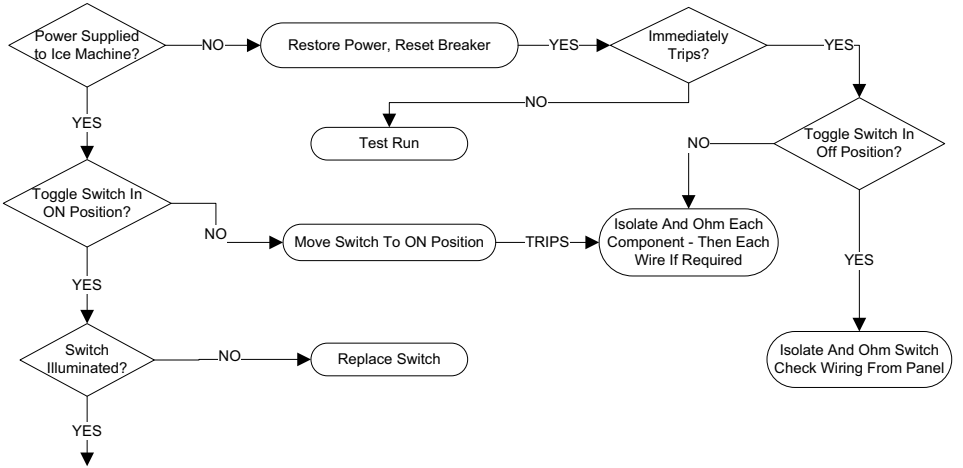
Yes
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
No
Adjusting Closes Thermostat?
No
Replace Thermostat
Yes
Remove Ice - Allow To Warm And Retest
Yes
Verify New Setting Cycles Machine On/Off
YES
Low Pressure Control Closed?
NO
Evaporator Cold?
No
Refrigerant Pressure Below Cut-out?
No
Replace LPCO
Yes
Allow Evaporator To Warm And Retest
Yes
Repair Refrigerant Leak, Evacuate, Recharge
YES
High Pressure Control Closed?
NO
Resets?
No
Refrigerant Pressure Above Cut-out?
No
Replace HPCO
Resets & Trips
Clean Condenser, Check Fan Motor Check Fan Cycle Control
Yes
Clean Condenser, Check Fan Motor, Check FCC & Refrigeration System
YES

YES
Chute Switch Closed?
NO
Ice Contacting Actuator?
No
Actuator Functions?
No
Adjust Or Replace Actuator
Yes
Remove Ice And Retest
Yes
Replace Switch
Yes
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES

Yes
Gear Motor Runs?
NO
Line Voltage To Gear motor?
Yes
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
No
Replace Gear Motor
No
Repair Wiring
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
YES
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
No
Rebuild Or Replace Evaporator
YES

Yes
Line Voltage To Compressor Contactor Coil?
NO
Install Compressor Time Delay Jumper
Power To Contactor Coil?
No
Repair Wiring
Yes
Replace Rotation Sensor/Time Delay Relay
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

Electrical Flowchart - RF1200C/RFS1200C QuietQube



YES
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
NO
Adjusting Closes Thermostat?
NO
Replace Thermostat
YES
Remove Ice - Allow To Warm And Retest
YES
Verify New Setting Cycles Machine On/Off
YES
Chute Switch Closed?
NO
Ice Contacting Actuator?
NO
Actuator Functions?
NO
Adjust Or Replace Actuator
YES
Remove Ice And Retest
YES
Replace Switch
Yes
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
NO
Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Repair Wiring
YES
YES
Restore Water Supply / Replace Water Inlet Valve

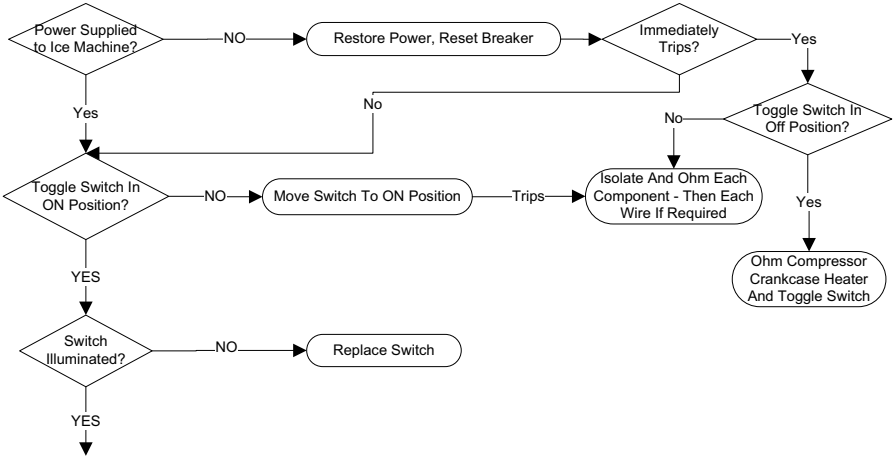
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Gear Motor Runs?
NO
Line Voltage To Gear motor?
YES
NO
Repair Wiring
YES
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
YES
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
NO
Replace Gear Motor
YES
Ice In Evaporator?
YES
Thaw Evaporator
NO
Rebuild Or Replace Evaporator

YES
Line Voltage To Left Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Left Evaporator
Power To Left Time Delay Relay Coil?
NO
Repair Wiring
YES
Yes
Delay Relay Contacts Closed?
NO
Replace Relay
Delay Relay Contacts Closed?
YES
Replace Rotation Sensor/Time Delay
YES
NO
Replace Relay

YES
Line Voltage To Compressor Contactor Coil?
NO
High Pressure Control Closed?
NO
Resets?
NO
Refrigerant Pressure Above Cut-out?
NO
Replace HPCO
YES
Clean Condenser, Check Fan Motor, Check Fan Cycle Control & Refrigeration System
Resets & Trips
Clean Condenser, Check Fan Motor Check Fan Cycle Control
YES
Low Pressure Control Closed?
NO
Line Voltage At Liquid Line Solenoid Valve?
NO
Replace Relay
YES
Repair Wiring
YES
Verify:
Refrigerant Pressure is Higher Than LPCO Cut-in
Both Shut-off Valves are Open
Repair/Replace Liquid Line Solenoid
Locate and Repair Refrigerant Leak
Replace LPCO Switch
YES

YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions

Electrical Flowchart – RF2300/RFS2300C Air & Water



Yes
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
No
Adjusting Closes Thermostat?
No
Replace Thermostat
Yes
Remove Ice - Allow To Warm And Retest
Yes
Verify New Setting Cycles Machine On/Off
YES
High Pressure Control Closed?
NO
Resets?
No
Refrigerant Pressure Above Cut-out?
No
Replace HPCO
Resets & Trips
Clean Condenser, Check Fan Motor Check Fan Cycle Control
Yes
Clean Condenser, Check Fan Motor, Check FCC & Refrigeration System
YES
Left Side Chute Switch Closed?
NO
Ice Contacting Actuator?
No
Actuator Functions?
No
Adjust Or Replace Actuator
Yes
Remove Ice And Retest
Yes
Replace Switch
Yes

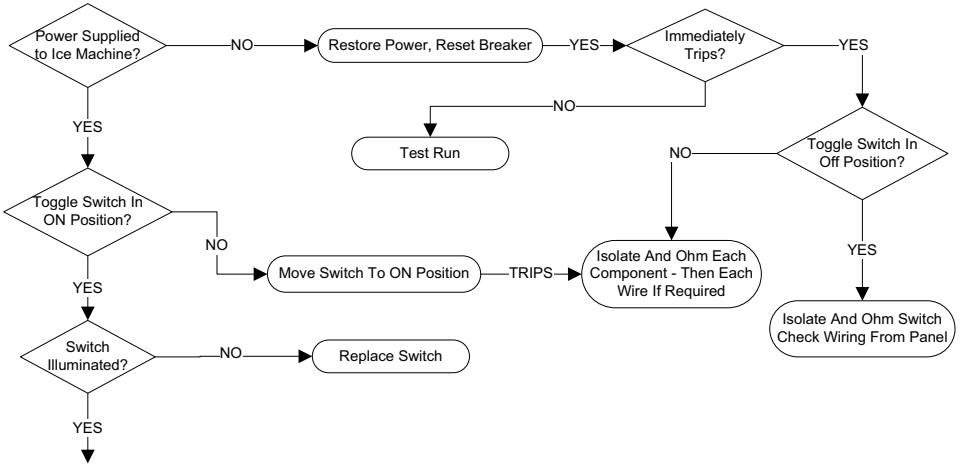
YES
Right Side Chute Switch Closed?
NO
Ice Contacting Actuator?
No
Actuator Functions?
No
Adjust Or Replace Actuator
Yes
Remove Ice And Retest
Yes
Replace Switch
Low Pressure Control Closed?
NO
Evaporator Cold?
No
Refrigerant Pressure Below Cut-out?
No
Replace LPCO
Yes
Allow Evaporator To Warm And Retest
Yes
Repair Refrigerant Leak, Evacuate, Recharge
Yes
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
YES
Yes
Restore Water Supply / Replace Water Inlet Valve

Yes
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Gear Motor Runs?
NO
Line Voltage To Gear motor?
Yes
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
No
Replace Gear Motor
No
Repair Wiring
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Or Replace Evaporator
YES
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
YES

YES
Line Voltage To Left Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Left Evaporator
Power To Left Time Delay Relay Coil?
No
Repair Wiring
YES
Yes
Left Delay Relay Contacts Closed?
NO
Replace Relay
No
Left Delay Relay Contacts Closed?
Yes
Replace Left Rotation Sensor/Time Delay
YES
Line Voltage To Right Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Right Evaporator
Power To Right Time Delay Relay Coil?
No
Repair Wiring
YES
Yes
Right Delay Relay Contacts Closed?
NO
Replace Relay
No
Right Delay Relay Contacts Closed?
Yes
Replace Right Rotation Sensor/Time Delay
YES

Yes
Line Voltage To Compressor Contactor Coil?
NO
Repair Wiring
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

Electrical Flowchart - RF2300C/RFS2300C QuietQube



YES
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
NO
Adjusting Closes Thermostat?
NO
Replace Thermostat
YES
Remove Ice - Allow To Warm And Retest
YES
Verify New Setting Cycles Machine On/Off
YES
Left Side Chute Switch Closed?
NO
Ice Contacting Actuator?
NO
Actuator Functions?
NO
Adjust Or Replace Actuator
YES
Remove Ice And Retest
YES
Replace Switch
YES
Right Side Chute Switch Closed?
NO
Ice Contacting Actuator?
NO
Actuator Functions?
NO
Adjust Or Replace Actuator
YES
Remove Ice And Retest
YES
Replace Switch
YES

YES
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
NO
Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Repair Wiring
YES
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Do Both Gear Motors Run?
NO
Line Voltage To Gear motors?
YES
NO
Repair Wiring
YES
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
NO
Replace Gear Motor
YES
Ice In Evaporator?
YES
Thaw Evaporator
NO
Rebuild Or Replace Evaporator

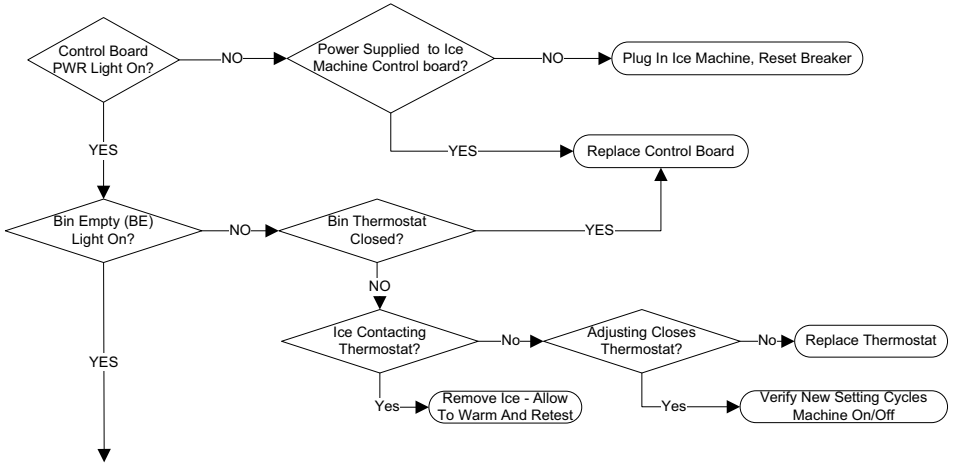
Yes
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
YES
Line Voltage To Left Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Left Evaporator
Power To Left Time Delay Relay Coil?
No
Repair Wiring
YES
Yes
Left Delay Relay Contacts Closed?
NO
Replace Relay
No
Left Delay Relay Contacts Closed?
Yes
Replace Left Rotation Sensor/Time Delay
YES

YES
Line Voltage To Right Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Right Evaporator
Power To Right Time Delay Relay Coil?
NO
Repair Wiring
YES
YES
Right Delay Relay Contacts Closed?
NO
Replace Relay
YES
Right Delay Relay Contacts Closed?
YES
Replace Right Rotation Sensor/Time Delay
NO
Replace Relay
YES

Line Voltage To Compressor Contactor Coil?
YES
NO
High Pressure Control Closed?
NO
Resets?
NO
Refrigerant Pressure Above Cut-out?
NO
Replace HPCO
Resets & Trips
Clean Condenser, Check Fan Motor Check Fan Cycle Control
YES
Clean Condenser, Check Fan Motor, Check Fan Cycle Control & Refrigeration System
YES
Low Pressure Control Closed?
NO
Line Voltage At Liquid Line Solenoid Valve?
NO
Replace Relay
YES
Repair Wiring
YES
Verify:
Refrigerant Pressure is Higher Than LPCO Cut-in Both Shut-off Valves are Open
Repair/Replace Liquid Line Solenoid Locate and Repair Refrigerant Leak
Replace LPCO Switch

YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions

Electrical Flowchart – RN0400



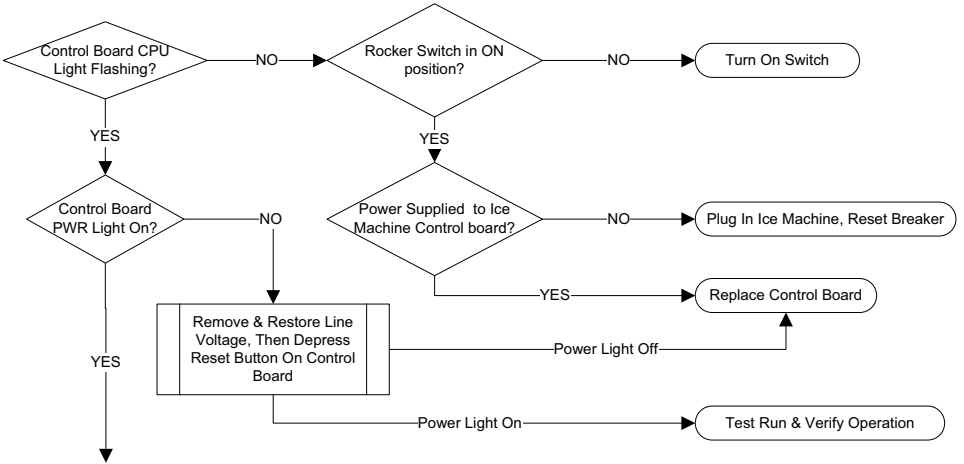
Yes
Time Delay (BT) Light Off?
NO
20 Minute Time Delay Period – Depress Control Board Reset Button To Override Delay Period
YES
Water Supply OK?
No
Supply Water To Ice Machine
NO
Yes
Water (WTR) Light On?
Reservoir Full?
NO
Line Voltage To Water Inlet Valve?
YES
Replace Water Inlet Valve
NO
YES
Disconnect Probes & Jumper Sensor Inputs On Control Board
YES
WTR Light On
Clean, Repair, Or Replace Water Level Probe Assembly
WTR Light Off
Replace Control Board

YES
WTR Light Flashing?
YES
BT Light On?
YES
20 Minute Time Delay Period
Depress Control Board Reset Button To Override Delay Period
NO
Press Control Board Reset Button – Flashing Stops, Gear Motor And Compressor Energize
Yes
Determine Cause Of Water Loss
No
Disconnect/Reconnect Power, Replace Control Board If Ice Machine Will Not Run
NO
Compressor (C) Light On?
NO
Compressor Switch In On Position?
NO
Move Switch To On Position
YES
Disconnect Switch From Control Board
Next
Check For Line Voltage @ Control Board Compressor Terminals
Line Voltage
Replace Rocker Switch
No Line Voltage
Replace Control Board
YES

Yes
Line Voltage @
Control Board Compressor And
Fan Terminals?
NO or Only One Component Has Line Voltage
Replace Control Board
YES
HPCO Closed?
NO
Verify:
Clearances & Ambient Are OK
Filter & Condenser Are Clean
Condenser Fan Motor Functions
Water cooled Models:
Water Regulating Valve Functions
Reset Or Replace High Pressure Cut Out
YES
Line Voltage To
Compressor?
NO
Repair Wiring
YES
Compressor
Running?
NO
Verify:
Compressor Overload is Closed
Start Components Function
Compressor Windings Are OK
YES

Yes
Gear Motor Runs?
NO
YES
60M Light On?
YES
Ice Machine Experienced Over Torque Condition Perform Heavily Scaled Cleaning Procedure
Lights on?
YES
20M Light On?
YES
20 Minute Time Delay Period - Verify No Ice In Evaporator Depress Control Board Reset Button To Override Delay Period Perform Heavily Scaled Cleaning Procedure
2nd Light On?
YES
Locked Out Due To Over Torque Condition Verify No Ice In Evaporator Depress Control Board Reset Button Perform Heavily Scaled Cleaning Procedure
YES/NO
DR or No Lights On?
YES
Check For Line Voltage @ Control Board Drive & L2 Terminals
YES
Verify: Gear Motor Overload is Closed Start Relay Functions Motor Windings Are OK
NO
Replace Control Board
Gear Motor Runs?
NO
YES
Disconnect Motor From Evaporator
YES
Gear Motor Runs?
NO
YES
Replace Gear Motor
Rebuild Or Replace Evaporator

Electrical Flowchart – RN1000/RN1400 Air & Water

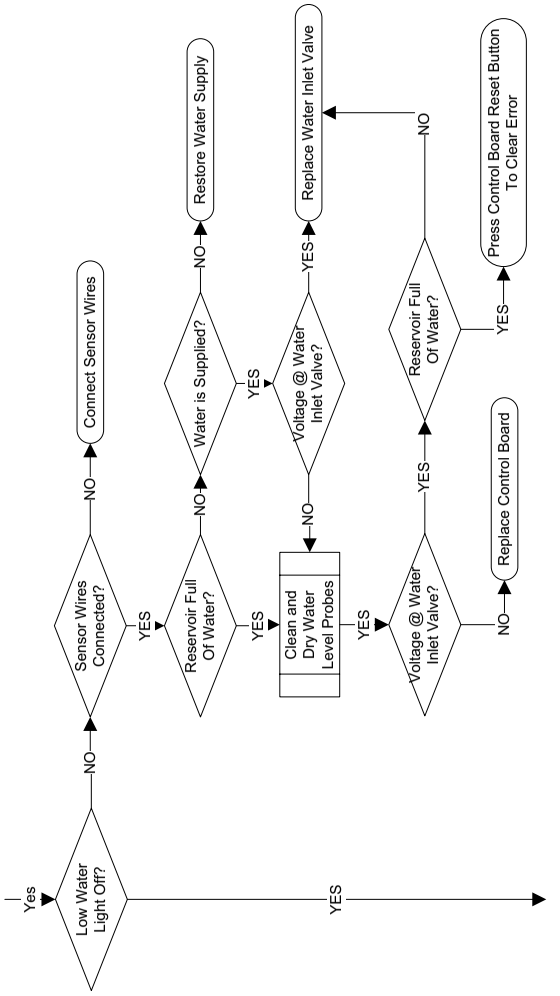


Yes
Time Delay Light OFF?
NO
Time Delay Period Expired?
NO
Wait For Delay To Expire
YES
YES
Low Bin Light On?
NO
Shuttle in up position?
NO
Light On Sensor Illuminated?
NO
Check Wiring, Repair Or Replace
YES
Depress Reset Button On Control Board Replace Control Board If Required
YES
Ice Holding Shuttle Open?
NO
Repair Or Replace Shuttle
YES
Clear Ice
YES

YES
Purge Light Off?
NO
Purge Rocker Switch In Off Position?
NO
Move Switch To Off Position
YES
Line Voltage At Drain Solenoid?
No
Remove & Restore Line Voltage, Then Depress Reset Button On Control Board
No Power @ Solenoid
Replace Control Board
YES
Power @ Solenoid
YES
Water Drains From Evaporator?
NO
Clear Drain Or Replace Drain Solenoid
YES
Ice Machine Level?
NO
Level Ice Machine To Allow Complete Drainage
YES
Test Run To Verify Operation

YES
Drain Clog Light Off?
NO
Water In Drain Trough?
YES
Clear Drain
NO
Clean and Dry Drain Sensor
Light On
Disconnect Sensor From Control Board
Light On
Replace Control Board
Light Off
Replace Sensor
YES
Light Off
Test Run To Verify Operation
High Pressure Light Off?
NO
Verify:
Clearances & Ambient Are OK
Filter & Condenser Are Clean
Condenser Fan Motor Functions
Replace High Pressure Cut Out
Water cooled Models:
Water Regulating Valve Functions
YES
Press Control Board Reset Button To Clear Error
YES

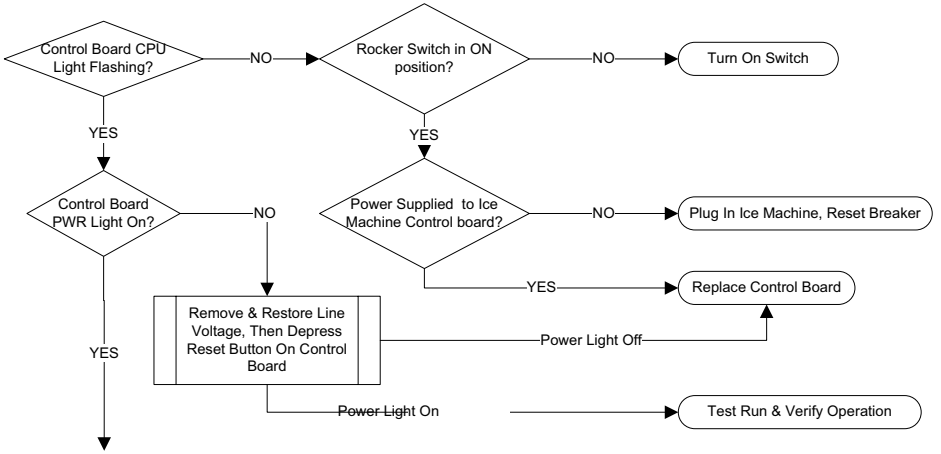
Yes
HI AMPS Light Off?
NO
Circuit Breaker On Control Box Tripped?
YES
Reset Breaker - Press Control Board Reset Button To Clear Error
NO
Line Voltage To Gear Motor?
NO
Press Control Board Reset Button To Clear Error
NO
Replace Control Board
YES
YES
Gear Motor Runs?
NO
Check Wires & Connections Replace Gear Motor
YES
Clean Ice Machine - Install Water Filter - Increase Cleaning Frequency -Verify Shuttle Shuts Off Ice Machine – Test Run


Yes
Low Water Light Off?
NO
Sensor Wires Connected?
NO
Connect Sensor Wires
YES
Reservoir Full Of Water?
NO
Water is Supplied?
NO
Restore Water Supply
YES
YES
Clean and Dry Water Level Probes
Voltage @ Water Inlet Valve?
NO
YES
Replace Water Inlet Valve
YES
Voltage @ Water Inlet Valve?
YES
Reservoir Full Of Water?
NO
NO
Replace Control Board
YES
Press Control Board Reset Button To Clear Error
YES

Yes
High Water Light Off?
NO
Control Board Sending Line Voltage To Water Valve?
NO
Press Control Board Reset Button Replace Control Board
YES
Voltage @ Water Inlet Valve?
NO
Replace Water Inlet Valve
YES
YES
Clean, Dry & Reinsert Water Level Probes
Water Flows
Replace Sensor – Control Board if Required
Water Flow Stops
Press Control Board Reset Button To Clear Error
Gear Motor Running?
NO
See Step HI AMPS LIGHT OFF
YES

Yes
Compressor Running?
NO
Line Voltage @ Control Board Compressor Terminals
NO
Replace Control Board
YES
Line Voltage At Compressor?
NO
Repair Wiring
YES
YES
Compressor Running?
NO
Verify:
Compressor Overload is Closed
Start Components Function
Compressor Windings Are OK
YES
Ice Has Excessive Water Content?
NO
Test Run To Verify Operation
YES
Verify Water Inlet Valve Closes 100% & Water Level Probe Functions

Electrical Flowchart – RN1000C/RN1200C QuietQube Remote



Yes
Time Delay Light OFF?
NO
Time Delay Period Expired?
NO
Wait For Delay To Expire
YES
YES
Low Bin Light On?
NO
Shuttle in up position?
NO
Light On Sensor Illuminated?
NO
Check Wiring, Repair Or Replace
YES
Depress Reset Button On Control Board Replace Control Board If Required
YES
Ice Holding Shuttle Open?
NO
Repair Or Replace Shuttle
YES
Clear Ice
YES

YES
Purge Light Off?
NO
Purge Rocker Switch In Off Position?
NO
Move Switch To Off Position
YES
Line Voltage At Drain Solenoid?
No
Remove & Restore Line Voltage, Then Depress Reset Button On Control Board
No Power @ Solenoid
Replace Control Board
YES
Power @ Solenoid
YES
Water Drains From Evaporator?
NO
Clear Drain Or Replace Drain Solenoid
YES
Ice Machine Level?
NO
Level Ice Machine To Allow Complete Drainage
YES
Test Run To Verify Operation
YES

YES
Drain Clog Light Off?
NO
Water In Drain Trough?
YES
Clear Drain
NO
Clean and Dry Drain Sensor
Light On
Disconnect Sensor From Control Board
Light On
Replace Control Board
Light Off
Replace Sensor
YES
Light Off
Test Run To Verify Operation
High Pressure Light Off?
NO
Verify:
Clearances & Ambient Are OK
Condenser Is Clean
Condenser Fan Motor Functions
Replace High Pressure Cut Out
YES
Press Control Board Reset Button To Clear Error
YES

YES
HI AMPS Light Off?
NO
Circuit Breaker On Control Box Tripped?
YES
Reset Breaker - Press Control Board Reset Button To Clear Error
NO
Line Voltage To Gear Motor?
NO
Press Control Board Reset Button To Clear Error
NO
Replace Control Board
YES
YES
Gear Motor Runs?
NO
Check Wires & Connections Replace Gear Motor
YES
Clean Ice Machine - Install Water Filter - Increase Cleaning Frequency -Verify Shuttle Shuts Off Ice Machine – Test Run

YES
Low Water Light Off?
NO
Sensor Wires Connected?
NO
Connect Sensor Wires
YES
Reservoir Full Of Water?
NO
Water is Supplied?
NO
Restore Water Supply
YES
YES
Clean and Dry Water Level Probes
NO
Voltage @ Water Inlet Valve?
YES
Replace Water Inlet Valve
YES
YES
Voltage @ Water Inlet Valve?
YES
Reservoir Full Of Water?
NO
NO
Replace Control Board
YES
Press Control Board Reset Button To Clear Error
YES

YES
High Water Light Off?
NO
Control Board Sending Line Voltage To Water Valve?
NO
Press Control Board Reset Button Replace Control Board
YES
Voltage @ Water Inlet Valve?
NO
Replace Water Inlet Valve
YES
YES
Clean, Dry & Reinsert Water Level Probes
Water Flows
Replace Sensor – Control Board if Required
Water Flow Stops
Press Control Board Reset Button To Clear Error
Gear Motor Running?
NO
See Step HI AMPS LIGHT OFF
YES

YES
Compressor Running?
NO
Line Voltage @ Control Board Compressor Terminals
NO
Replace Control Board
YES
Line Voltage At Liquid Line Solenoid Valve?
NO
Repair Wiring
YES
YES
Low Pressure Control Closed?
NO
Verify:
Refrigerant Pressure is Higher Than LPCO Cut-in
Both Shut-off Valves are Open
Repair/Replace Liquid Line Solenoid
Locate and Repair Refrigerant Leak
Replace LPCO Switch
YES

YES
Contactor Coil Has Line Voltage?
NO
Repair Wiring
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage At Compressor?
NO
Repair Wiring
YES
Compressor Running?
NO
Verify:
Compressor Overload is Closed
Start Components Function
Compressor Windings Are OK
YES
Test Run To Verify Operation
YES

YES
Ice Has Excessive Water Content?
NO
Test Run To Verify Operation
YES
Verify Water Inlet Valve Closes 100% & Water Level Probe Functions

Refrigeration Troubleshooting

CAPILLARY TUBE MODELS

If the gear motor and/or compressor are not energized refer to Electrical Troubleshooting Refer to Operational Pressure Charts for normal pressures and temperatures				
	Low on Refrigerant	Overcharge of Refrigerant	Non Condensable in System	Restricted Capillary Tube
Discharge Pressure	Low	High	High	Low
Suction Pressure	Low	High	High	Low
Evaporator Inlet Temperature	Normal	Low	High	Low
Evaporator Outlet Temperature	High	Normal	High	Low
Compressor Discharge Line Temperature Normal Range = > 165° @ 70° - 210° @ 110° > 74°C @ 21°C - 99°C @ 43°C)	High Increases with run time	Normal	High Increases with run time	High Increases with run time

THERMOSTATIC EXPANSION VALVE MODELS

If the gear motor and/or compressor are not energized refer to Electrical Troubleshooting Refer to Operational Pressure Charts for normal pressures and temperatures					
	Low on Refrigerant	Overcharge of Refrigerant	Non Condensable In System	Liquid Line Restriction, Suction Line Restriction, Or TXV Starving	Flooding TXV or Loose Sensing Bulb
Discharge Pressure	Low	High	High	Low	High
Suction Pressure	Low	High	High	Low	High
Evaporator Inlet Temperature	Normal	Normal or Low	High	Normal	Normal or High
Evaporator Outlet Temperature	High	Normal	High	High > 12° Differential between Inlet and Outlet	< 10° Differential between Inlet and Outlet
Discharge Line Temperature	High	Normal	High Increases With Run Time	High Increases With Run Time	Low Decreases With Run Time

Component Specifications

BIN THERMOSTAT

Model	Setting	Cut-Out	Cut-In
RF0244/RNS0244 RF0266/RNS0308 RF0385/RNS0385 RF0388/RF0399 RF0644/RF1200 RFS1200/RF2300	5	37°F ±1 3°C ±.1	43°F ±1 6°C ±.1
RF0300/RFS0300 RF0650	4	36°F ±1 2.2°C ±.1	42°F ±1 5.6°C ±.1

LOW TEMPERATURE THERMOSTAT

Evaporator safety thermostat)

Model	Setting	Cut-Out	Cut-In
RF0244/RNS0244 RF0266 RF1200/RFS1200 RF2300/RFS2300	5	-9°F ±1 -23°C ±.1	10°F ±1 -12°C ±.1
RF0300/RFS0300 RF0385/RNS0385 RF0388/RF0399 RF0644/RF650	7	-11°F ±.1 -24°C ±.1	7 °F±.1 -14°C ±.1

HIGH PRESSURE CUTOUT (HPCO) CONTROL

Model	Cut-Out	Cut-In
RF0650/ RF1200/RF2300	435 psig ±10 (3000 kPa ±69) 30 bar ±.69	Manual Reset
RN0400/RN1000/RN1400	425 psig ±10 (2930 kPa ±69) 29 bar ±.69	287 psig ±10 (1979 kPa ±69) 19.79bar ±.69 Auto Reset
RN1000C/RCU1075 RN1200C/RCU1275 RF1200C/RCU1075	450 psig ±10 (3100 kPa ±69) 31 bar ±.69	295 psig ±10 (2034 kPa ±69) 20 bar ±.69 Auto Reset
RF2300C/RCU2375	450 psig ±10 (3100 kPa ±69) 31 bar ±.69	Manual Reset

ROTATION SENSOR

RF0644/RF0650/RF1200/RFS1200/RF2300/RFS2300

light	Definition
Yellow Blinking	Time Delay Period
Yellow Solid	Normal Operation Sensing
Red Blinking	Fault Time Delay Period
Red Solid	Lockout - 8 Consecutive Faults Remove/Restore Power To Reset
Refer to sequence of operation “RF0644/RF0650/RF1200/ RFS1200/RF2300/RFS2300” on page 43 and “RF0644/ RF0650/RF1200/RFS1200/RF2300/RFS2300 Air & Water” on page 62 for additional information	

LOW PRESSURE CUTOUT (LPCO) CONTROL

Model	Cut-Out	Cut-In
R0F650/ RF1200	7 psig ±2 (.5 bar ±.2)	36 psig ±2 (2.5 bar ±.2)
RF2300	12 psig ±2 (.8 bar ±.2)	Manual Reset
RN1000C/RCU1075 RN1200C/RCU1275 RF1200C/RCU1075 RFS1200C/RCU1075 RF2300C/RCU2375 RFS2300C/RCU2375	12 psig ±3 (.8 bar ±.2)	35 psig ±5 (2.4 bar ±.4)

FAN CYCLE CONTROL

Model	Cut-Out (Open)	Cut-In (Close)
RF0244	230 ±5 (16 bar ±.34)	250 ±5 (17.2 bar ±.34)
RF0266	230 ±5 (16 bar ±.34)	250 ±5 (17.2 bar ±.34)
RF0385	260 ±5 (18.1 bar ±.34)	280 ±5 (19.3 bar ±.34)
RF0388	260 ±5 (18.1 bar ±.34)	280 ±5 (19.3 bar ±.34)
RF0399	260 ±5 (18.1 bar ±.34)	280 ±5 (19.3 bar ±.34)
RF0300 60 hz	260 ±5 (17.8 bar ±.34)	275 ±5 (16.6 bar ±.34)
RF0300 50 hz	260 ±5 (17.8 bar ±.34)	280 ±5 (19 bar ±.34)
RF0650 60 hz	230 ±5 (16 bar ±.34)	250 ±5 (17.2 bar ±.34)
RF0650 50 hz	215 ±5 (14.8 bar ±.34)	230 ±5 (16 bar ±.34)
RF1200 60 hz	260 ±5 (17.8 bar ±.34)	275 ±5 (19 bar ±.34)
RF1200 50 hz	240 ±5 (16.6 bar ±.34)	260 ±5 (17.8 bar ±.34)
RF2300	250 ±5 (17.2 bar ±.34)	265 ±5 (18.4 bar ±.34)

FILTER-DRIERS

The size of the filter-drier is important. The refrigerant charge is critical. Using an improperly sized filter-drier will cause the ice machine to be improperly charged with refrigerant.

Important

Driers are covered as a warranty part. The drier must be replaced any time the system is opened for repairs.

SUCTION CLEANUP FILTER-DRIER

Contaminated systems must have a suction line filter-drier installed to remove contamination. An access valve must be installed on the inlet side of the suction filter to allow pressure drop readings to be obtained.

Suction Line Clean-Up Filter		
Model	**Drier Size**	**End Connection Size**
All Models	UK-165S	5/8 in.

TOTAL SYSTEM REFRIGERANT CHARGE

Important

This information is for reference only. Refer to the ice machine serial number tag to verify the system charge. Serial plate information overrides information listed on this page.

Model	Refrigerant Charge
RF0244A	7.5 oz / 210 g
RNS0244A	7.5 oz / 210 g
RF0266A	7.5 oz / 210 g
RF0300A/RFS0300A	11.25 oz / 320 g
RF0385A	11.25 oz / 320 g
RNS0385A	11.25 oz / 320 g
RF0388A	11.25 oz / 320 g
RF0399A	11.25 oz / 320 g
RN0400	19 oz / 539 g
RF0650A	19.5 oz / 550 g
RF0650W	15.5 oz / 439 g
RN1000A	24 oz / 680 g
RN1000W	15 oz / 426 g
RN1000C	156 oz / 4.42 kg
RF1200A/RFS1200A	24.75 oz / 700 g
RF1200W/RF1200W	16.25 oz / 460 g
RF1200C/RFS1200C	156 oz / 4.42 kg
RN1200C	156 oz / 4.42 kg
RN1400A	34 oz / 652 g
RN1400W	21 oz / 426 g
RF2300A/RFS2300A	63.5 oz / 1800 g
RF2300W/RFS2300W	38.75 oz / 1100 g
RF2300C/RFS2300C	240 oz / 6.08 kg

NOTE: All ice machines are charged using R-404A refrigerant.

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Charts

Ice Production & Refrigerant Pressure

These charts are used as guidelines to verify correct ice machine operation.

Accurate collection of data is essential to obtain the correct diagnosis.

- Zero out manifold gauge set before obtaining pressure readings to avoid misdiagnosis.
- Discharge and suction pressure are highest at the beginning of the cycle. Allow system to stabilize for a minimum of 10 minutes, then verify the pressures are within the range indicated.
- Water temperature will affect suction and discharge pressure - 50°F (10°C) water temperature will result in pressures on the lower end of the ranges specified. 90°F (32°C) water temperatures will result in pressures on the upper end of the range specified.

Flake Models

RF0244A & RFS0244

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	182lbs 83 kgs
90°F/70°F 32°C/21°C	150 lbs 68 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	220-250 1517-1724	38-40 262-276
90°F PSIG 32°C kPa	300-320 2068-2206	45-51 310-352
110°F PSIG 43°C kPa	360-390 2482-2689	49-55 338-379

RF0266A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	182lbs 83 kgs
90°F/70°F 32°C/21°C	150 lbs 68 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	220-250 1517-1724	38-40 262-276
90°F PSIG 32°C kPa	300-320 2068-2206	45-51 310-352
110°F PSIG 43°C kPa	360-390 2482-2689	49-55 338-379

RF0300A & RFS0300A

SELF CONTAINED AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	311 lbs 141 kgs
90°F/70°F 32°C/21°C	259 lbs 117 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	260-275 1792-1896	28-31 193-214
90°F PSIG 32°C kPa	260-280 1792-1930	30-36 207-248
110°F PSIG 43°C kPa	325-350 2240-2413	32-38 221-262

RF0385A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	332 151 kg
90°F/70°F 32°C/21°C	294 122 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	243-270 1675-1862	31-36 214-248
90°F PSIG 32°C kPa	273-315 1882-2172	34-39 234-269
110°F PSIG 43°C kPa	348-380 2399-2620	38-43 262-296

RF0388A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	332 lbs 151 kg
90°F/70°F 32°C/21°C	270 lbs 122 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	235-270 1620-1862	29-32 200-221
90°F PSIG 32°C kPa	255-280 1758-1930	29-35 200-241
110°F PSIG 43°C kPa	320-340 2706-2344	31-38 214-262

RF0399A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	332 lbs 151 kg
90°F/70°F 32°C/21°C	270 lbs 122 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	260-280 1793-1930	32-34 221-234
90°F PSIG 32°C kPa	270-290 1862-2000	29-35 200-241
110°F PSIG 43°C kPa	340-360 2344-2482	31-38 214-262

RF0644A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	688 lbs 312 kg
90°F/70°F 32°C/21°C	540 lbs 245 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	240-265 1655-1827	33-35 228-241
90°F PSIG 32°C kPa	280-300 1930-2068	34-40 235-276
110°F PSIG 43°C kPa	340-370 2344-2551	40-46 275-318

RF0650A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	688 lbs 312 kg
90°F/70°F 32°C/21°C	540 lbs 245 kg
* Indicates Preliminary Data	

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	240-265 1655-1827	33-35 228-241
90°F PSIG 32°C kPa	280-300 1930-2068	34-40 235-276
110°F PSIG 43°C kPa	340-370 2344-2551	40-46 275-318

RF0650W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	716 lbs 325 kg*
90°F/70°F 32°C/21°C	545 lbs 247 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	250-270 1724-1862	33-37 228-255
90°F PSIG 32°C kPa	250-270 1724-1862	34-38 234-262
110°F PSIG 43°C kPa	250-270 1724-1862	29-33 200-228

RF1200A & RFS1200A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	1186 lbs 538 kg
90°F/70°F 32°C/21°C	864 lbs 392 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	255-280 1755-1930	32-34 220-234
90°F PSIG 32°C kPa	325-350 2240-2413	36-42 248-290
110°F PSIG 43°C kPa	400-425 2758-2930	45-51 310-352

RF1200W & RFS1200W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	1204 lbs 546 kg
90°F/70°F 32°C/21°C	1004 lbs 455 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	245-255 1689-1758	29-31 200-214
90°F PSIG 32°C kPa	270-280 1862-1930	29-35 200-241
110°F PSIG 43°C kPa	275-290 1896-2000	30-36 207-248

Condenser Water Consumption	
103	**Gallons/100 lbs. of Ice**
390	**Liters/45 kgs. of Ice**

RF1278C & RFS1278C

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	1413 lbs 641 kg
70°F/50°F 21°C/10°C	1182 lbs 536 kg
90°F/70°F 32°C/21°C	975 442 kg
120°F/70°F 49°C/21°C	603 274 kg

OPERATING PRESSURES PSIG/kPa		
Air Temperature Entering Condenser °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	185-200 1276-1379	23-28 159-193
70°F PSIG 21°C kPa	225-255 1551-1758	30-35 207-241
80°F PSIG 27°C kPa	230-280 1586-1931	31-36 214-248
90°F PSIG 32°C kPa	243-305 1675-2103	33-38 228-262
120°F PSIG 49°C kPa	355-400 2448-2758	38-43 262-296

RF2300A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	2301 lbs 1044 kg
90°F/70°F 32°C/21°C	1665 lbs 755 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	290-310 1999-2137	35-38 241-262
90°F PSIG 32°C kPa	350-380 2413-2620	38-43 262-296
110°F PSIG 43°C kPa	410-430 2827-2965	43-49 296-338

RF2300W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	2608 1183 kg
90°F/70°F 32°C/21°C	2201 lbs 998 kg

OPERATING PRESSURES PSIG & kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	290-310 1999-2137	35-38 241-262
90°F PSIG 32°C kPa	350-380 2413-2620	38-43 262-296
110°F PSIG 43°C kPa	410-430 2827-2965	43-49 296-338

RF2378C & RFS2378C

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	2448 lbs 1110 kg
70°F/50°F 21°C/10°C	2137 lbs 969 kg
90°F/70°F 32°C/21°C	1748 lbs 793 kg
120°F/70°F 49°C/21°C	1118 lbs 507 kg

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 16°C kPa	175-200 1207-1379	26-31 176-214
70°F PSIG 21°C kPa	220-250 1517-1724	31-36 214-248
80°F PSIG 27°C kPa	225-275 1551-1896	32-37 221-255
90°F PSIG 32°C kPa	250-310 1724-2137	33-38 228-262
120°F PSIG 49°C kPa	365-410 2517-2827	38-43 262-296

Nugget Models

RNS0244A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	136 lb* 62 kg*
90°F/70°F 32°C/21°C	110 lb* 50 kg*
* Indicates Preliminary Data	

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	220-250 1517-1724	38-40 262-276
90°F PSIG 32°C kPa	300-320 2068-2206	45-51 310-352
110°F PSIG 43°C kPa	360-390 2482-2689	49-55 338-379

RNS0385A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	258 lb* 117 kg*
90°F/70°F 32°C/21°C	225 lb* 102 kg*
* Indicates Preliminary Data	

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	243-270 1675-1862	31-36 214-248
90°F PSIG 32°C kPa	273-315 1882-2172	34-39 234-269
110°F PSIG 43°C kPa	348-380 2399-2620	38-43 262-296

RN0400A

AIR-COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
70°F/50°F 21°C/10°C	385 lbs 175 kg
90°F/70°F 32°C/21°C	294 lbs 133 kg

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
60°F PSIG 16°C kPa	170-200 1172-1379	23-25 159-172
70°F PSIG 21°C kPa	240-270 1655-1862	25-30 172-207
80°F PSIG 27°C kPa	245-275 1689-1896	30-35 207-241
90°F PSIG 32°C kPa	250-350 1724-2413	32-38 214-262
100°F PSIG 38°C kPa	235-375 1620-2586	36-42 248-290

RN1000A

AIR-COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG					
Air Temperature Entering Condenser °F/°C	**Water Temperature °F/°C**				
	50/10	**60/16**	**70/21**	**80/27**	**90/32**
60°F 16°C	1135 515	1070 486	1015 461	967 439	924 420
70°F 21°C	1100 499	1000 454	938 426	902 410	859 390
80°F 27°C	962 437	916 416	871 395	826 375	782 355
90°F 32°C	828 376	816 371	794 361	755 343	698 317
100°F 38°C	786 357	728 331	686 312	654 297	610 277

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
60°F PSIG 16°C kPa	220-240 1517-1655	33-38 228-262
70°F PSIG 21°C kPa	225-245 1551-1689	37-42 255-290
80°F PSIG 27°C kPa	235-250 1620-1724	38-43 262-296
90°F PSIG 32°C kPa	235-250 1620-1724	39-44 269-303
100°F PSIG 38°C kPa	255-280 1758-1931	41-46 283-317

RN1000W

WATER-COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG					
Air Temperature Around Ice Machine °F/°C	**Water Temperature °F/°C**				
	50/10	**60/16**	**70/21**	**80/27**	**90/32**
60°F 16°C	1071 486	1025 465	971 441	912 414	849 386
70°F 21°C	1035 470	979 444	932 423	888 403	842 382
80°F 27°C	975 443	912 414	870 395	839 381	814 370
90°F 32°C	885 402	826 375	786 357	759 345	745 338
100°F 38°C	762 346	723 328	683 310	642 392	603 274

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
60°F PSIG 16°C kPa	220-240 1517-1655	33-38 228-262
70°F PSIG 21°C kPa	225-245 1551-1689	37-42 255-290
80°F PSIG 27°C kPa	235-250 1620-1724	38-43 262-296
90°F PSIG 32°C kPa	235-250 1620-1724	39-44 269-303
100°F PSIG 38°C kPa	255-280 1758-1931	41-46 283-317

RN1400A

AIR-COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
50°F/50°F 10°C/10°C	1462 lbs 663 kg
70°F/50°F 21°C/10°C	1456 lbs 660 kg
90°F/70°F 32°C/21°C	1100 lbs 499 kg
110°F/70°F 43°C/21°C	801 lbs 363 kg

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	224-235 1544-1620	24-29 165-200
70°F PSIG 21°C kPa	238-275 1641-1896	26-31 179-214
80°F PSIG 27°C kPa	245-290 1689-1999	28-33 193-228
90°F PSIG 32°C kPa	316-370 2179-2551	34-39 234-269
100°F PSIG 38°C kPa	382-430 2634-2965	41-46 283-317

RN1400W

WATER-COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
50°F/50°F 10°C/10°C	1606 lbs 728 kg
70°F/50°F 21°C/10°C	1514 lbs 687 kg
90°F/70°F 32°C/21°C	1100 lbs 499 kg
110°F/70°F 43°C/21°C	1151 lbs 522 kg

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	220-230 1516-1586	24-29 165-200
70°F PSIG 21°C kPa	220-230 1517-1586	25-30 172-207
80°F PSIG 27°C kPa	225-235 1551-1620	26-31 179-214
90°F PSIG 32°C kPa	225-235 1551-1620	27-32 186-221
100°F PSIG 38°C kPa	265-275 1827-1896	33-38 228-262

RN1078C

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	1120 lbs 508kg
70°F/50°F 21°C/10°C	898 lbs 407kg
90°F/70°F 32°C/21°C	770 lbs 349kg
120°F/70°F 49°C/21°C	490 lbs 222kg

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
60°F PSIG 16°C kPa	240-250 1655-1724	33-35 227-241
70°F PSIG 21°C kPa	245-265 1689-1827	35-38 241-262
80°F PSIG 27°C kPa	245-270 1689-1862	36-39 248-269
90°F PSIG 32°C kPa	250-270 1724-1862	37-40 255-276
120°F PSIG 49°C kPa	360-400 2482-2758	45-49 310-338

RN1278C

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	1201 lbs 545kg
70°F/50°F 21°C/10°C	981 lbs 445kg
90°F/70°F 32°C/21°C	770 lbs 349kg
120°F/70°F 49°C/21°C	681 lbs 309kg

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	190-200 1310-1379	21-26 145-179
70°F PSIG 21°C kPa	227-265 1565-1827	25-30 172-207
80°F PSIG 27°C kPa	230-260 1586-1793	26-31 179-214
90°F PSIG 32°C kPa	238-280 1641-1931	27-32 186-221
120°F PSIG 49°C kPa	356-400 2455-2758	34-39 234-269

Rack Models

RF1279R

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG
Water Temperature °F/°C
50/10
1413 lbs 641 kg

SUCTION PRESSUREPSIG/kPa	
Freeze Cycle	
Liquid Line Pressure	**Acceptable Suction Pressure Range**
185-200 psi 1276-1379 kPa	23-28 psi 159-193 kPa
225-255 psi 1551-1758 kPa	30-35 psi 207-241 kPa
230-280 psi 1586-1931 kPa	31-36 psi 214-248 kPa
243-305 psi 1675-2103 kPa	33-38 psi 228-262 kPa
355-400 psi 2448-2758 kPa	38-43 psi 262-296 kPa

RF2379R

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG
Water Temperature °F/°C
50/10
2448 lbs 1110 kg

SUCTION PRESSUREPSIG/kPa	
Freeze Cycle	
Liquid Line Pressure	**Acceptable Suction Pressure Range**
175-200 psi 1207-1379 kPa	26-31 psi 176-214 kPa
220-250 psi 1517-1724 kPa	31-36 psi 214-248 kPa
225-275 psi 1551-1896 kPa	32-37 psi 221-255 kPa
250-310 psi 1724-2137 kPa	33-38 psi 228-262 kPa
365-410 psi 2517-2827 kPa	38-43 psi 262-296 kPa

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Diagrams

Wiring Diagrams

The following pages contain electrical wiring diagrams. Be sure you are referring to the correct diagram for the ice machine you are servicing.

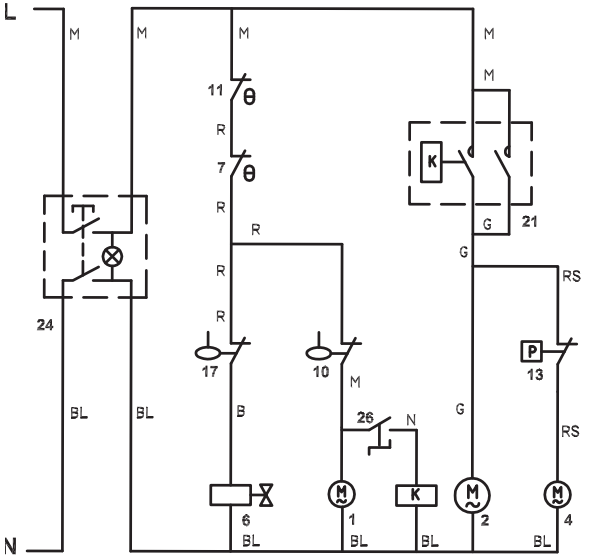
⚠ Warning

Always disconnect power before working on electrical circuitry.

Flake Models

RF0244/RNS0244/RF0266/RF0385/RNS0385/ RF0388/RF0399 AIR-COOLED

Refer to Nameplate for Voltage Rating

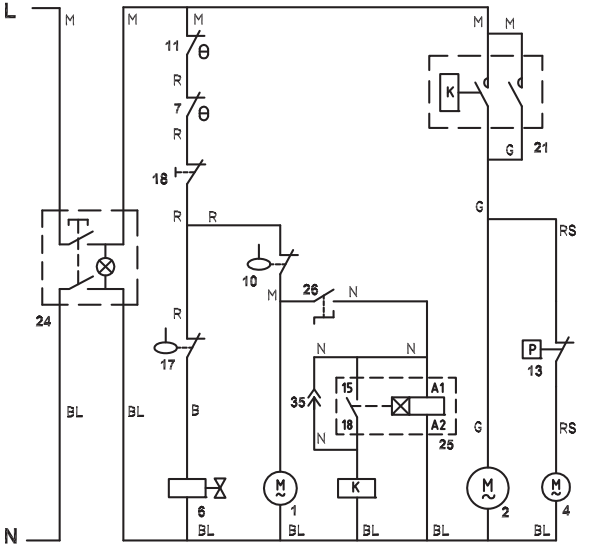


WIRING DIAGRAM LEGEND
RF0244/RNS0244/RF266/RF0385/RNS0385/RF0388/RF0399

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water Inlet valve
7	Evaporator low temperature safety
10	Low water level safety
11	Bin thermostat
12	High temperature limit (snap disc)
13	Fan cycle control
17	Water level switch
21	Compressor relay
24	On/Off switch
26	Gear motor centrifugal switch
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RF0300/RFS0300 AIR-COOLED

Refer to Nameplate for Voltage Rating

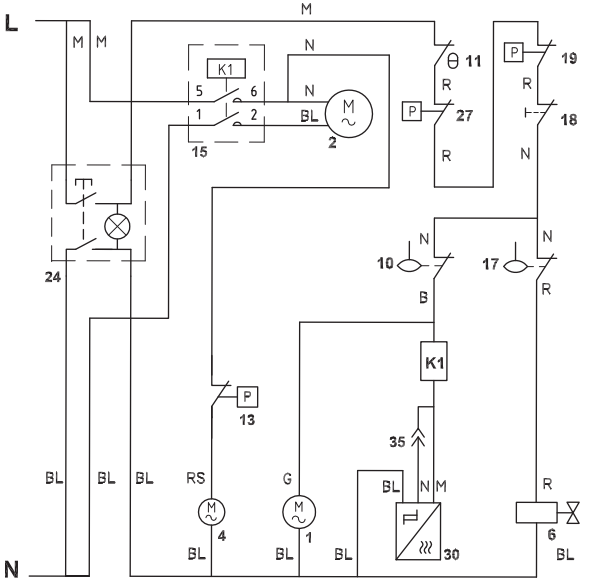


WIRING DIAGRAM LEGEND RF0300/RFS0300

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
7	Evaporator low temperature safety
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
17	Water level switch
18	Ice chute safety switch
21	Compressor relay
24	On/Off switch
25	Compressor time delay
26	Gear motor centrifugal switch
35	Compressor time delay by-pass
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RF0650/RF1200/RFS1200 AIR-COOLED

Refer to Nameplate for Voltage Rating

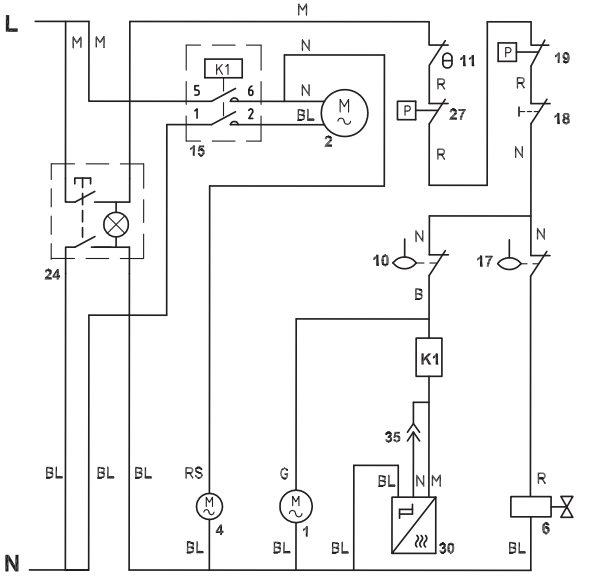


WIRING DIAGRAM LEGEND RF0650/RF1200/ RFS1200

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
21	Compressor relay
24	On/Off switch
25	Compressor time delay
27	Low pressure cut out
30	Rotation sensor
35	Compressor time delay by-pass
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RF1200/RFS1200 WATER-COOLED

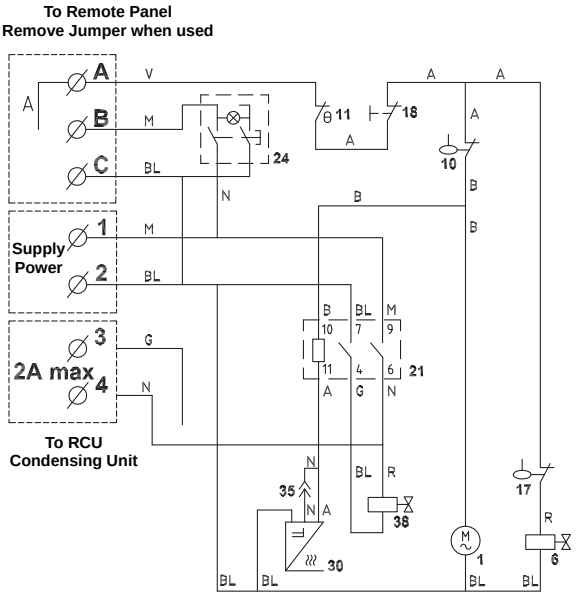
Refer to Nameplate for Voltage Rating



WIRING DIAGRAM LEGEND RF1200/RFS1200 WATER-COOLED

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
21	Compressor relay
24	On/Off switch
25	Compressor time delay
27	Low pressure cut out
30	Rotation sensor
35	Compressor time delay by-pass
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RF1200C/RFS1200C QUIETQUBE HEAD SECTION

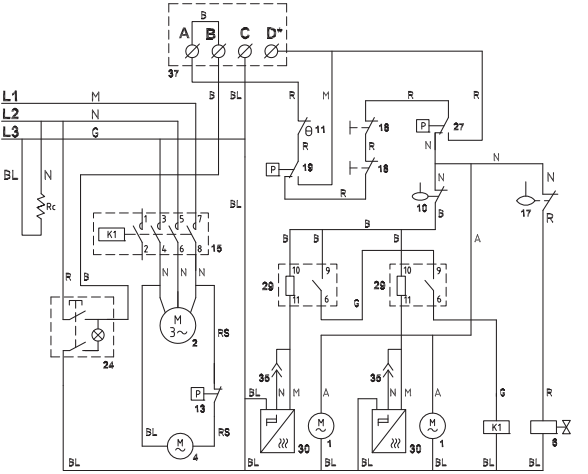


WIRING DIAGRAM LEGEND RF1200C/RFS1200C

1	Gear Motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
17	Water level switch
18	Ice chute safety switch
21	Compressor Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass
38	Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
V	Violet
A	Orange

RF2300/RFS2300 AIR-COOLED & WATER-COOLED

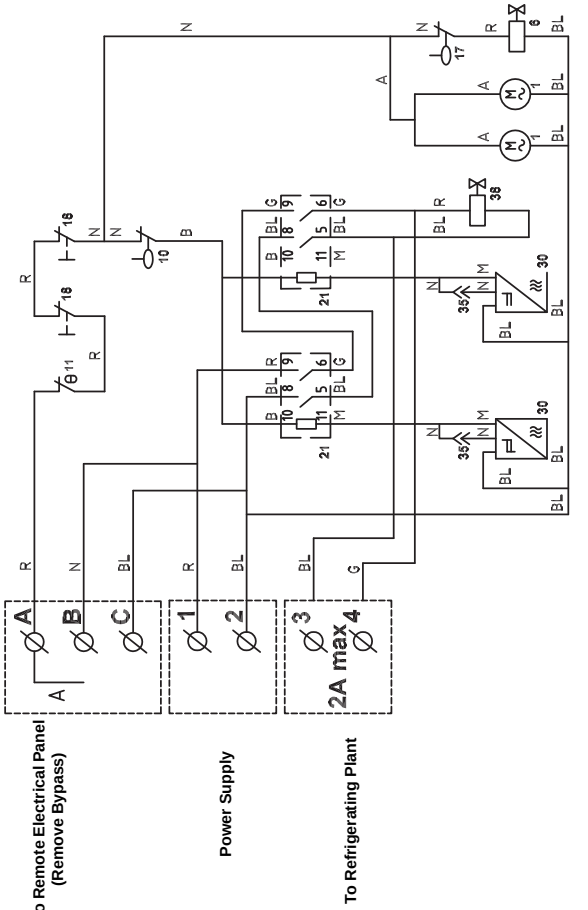
Refer to Nameplate for Voltage Rating



WIRING DIAGRAM LEGEND RF2300/RFS2300 AIR & WATER COOLED

1	Gear Motor
2	Compressor
4	Condenser fan motor (air-cooled only)
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
24	On/Off switch
25	Compressor time delay
27	Low pressure cut out
29	Compressor time delay relay
30	Rotation sensor
35	Compressor time delay by-pass
37	Remote indicator panel terminals
Rc	Compressor crankcase heater
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink
A	Orange

RF2378C/RFS2378C QUIETQUBE HEAD SECTION

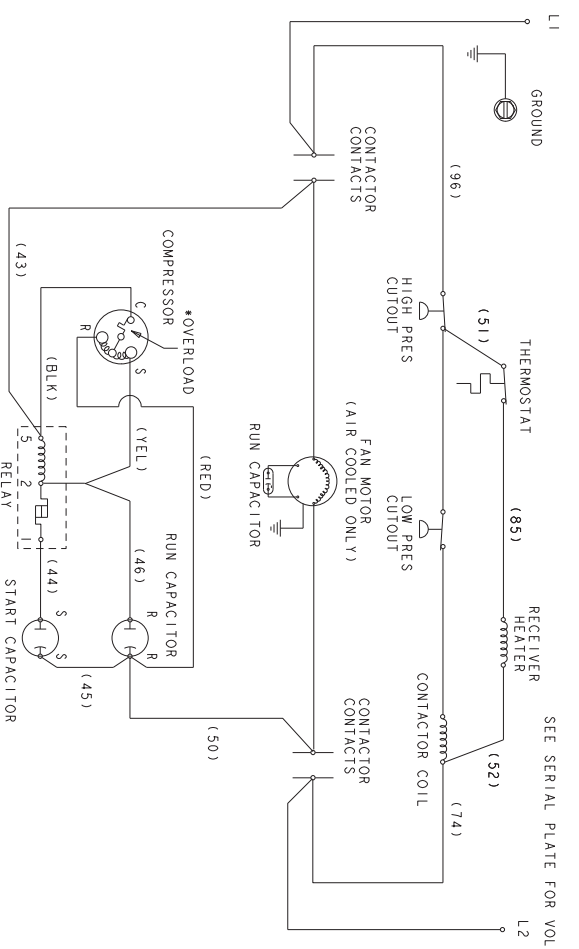


WIRING DIAGRAM LEGEND RF2300C/RFS2300 HEAD SECTION

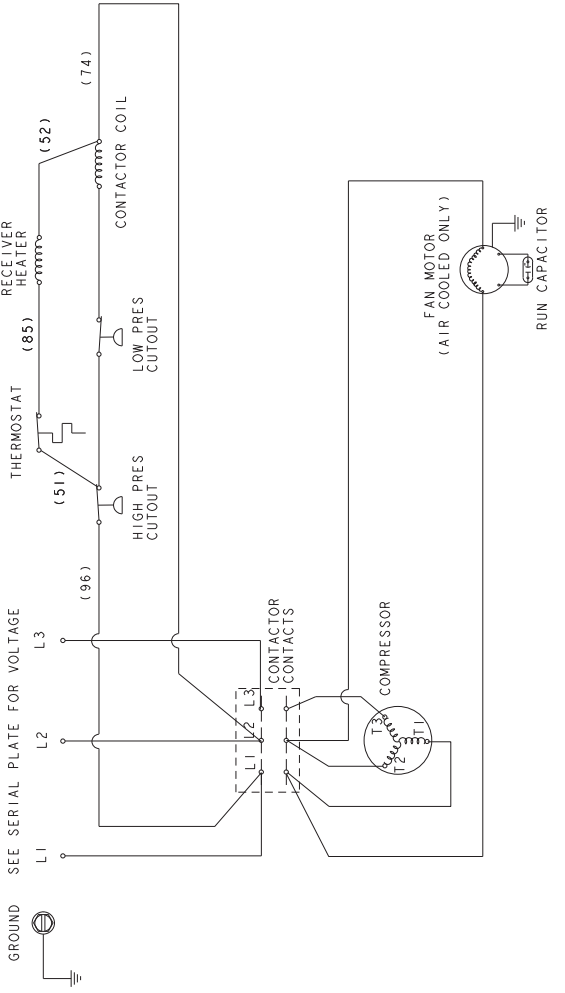
1	Gear Motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
17	Water level switch
18	Ice chute safety switch
21	Compressor Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass
38	Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
A	Orange

Condensing Units

RCU CONDENSING UNIT 1PH

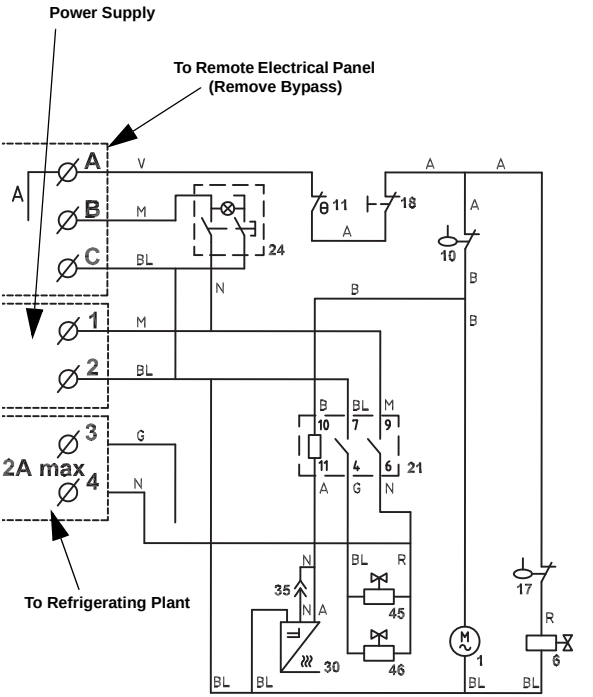


RCU CONDENSING UNIT 3PH



Rack Models

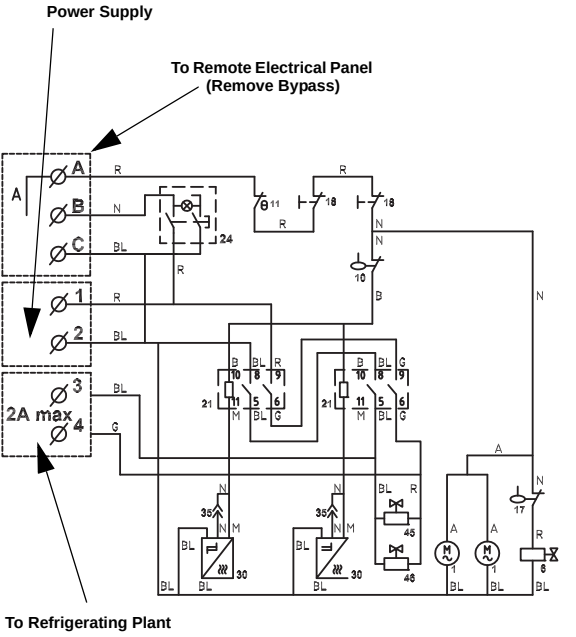
RF1279R/RFS1279R HEAD SECTION



WIRING DIAGRAM LEGEND RF1279R

1	Gear Motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
17	Water level switch
18	Ice chute safety switch
21	Compressor Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass
45	Suction Line Solenoid Valve
46	Liquid Line Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
V	Violet
A	Orange

RF2379R/RFS2379R HEAD SECTION

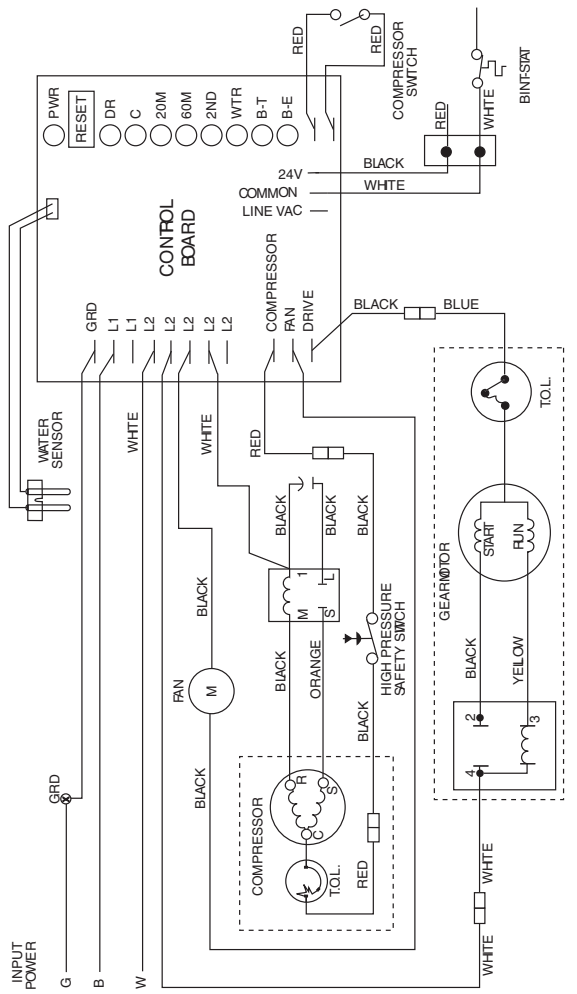


WIRING DIAGRAM LEGEND RF2379R

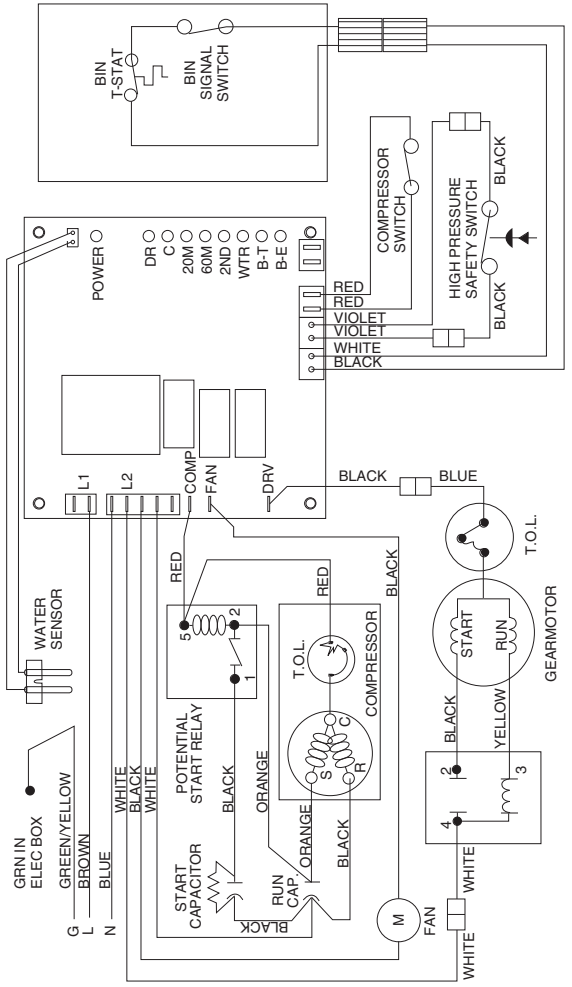
1	Gear Motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
17	Water level switch
18	Ice chute safety switch
21	Compressor Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass
45	Suction Line Solenoid Valve
46	Liquid Line Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
V	Violet
A	Orange

Nugget Models

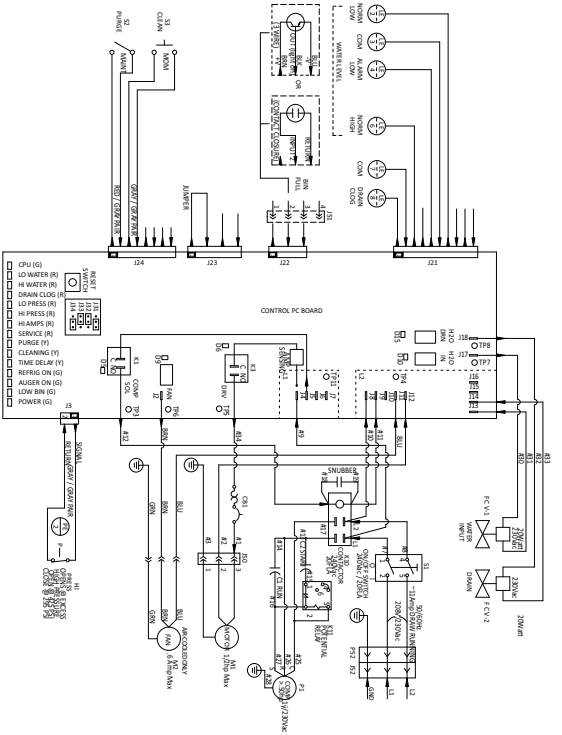
RN0400 115V/60HZ/1PH



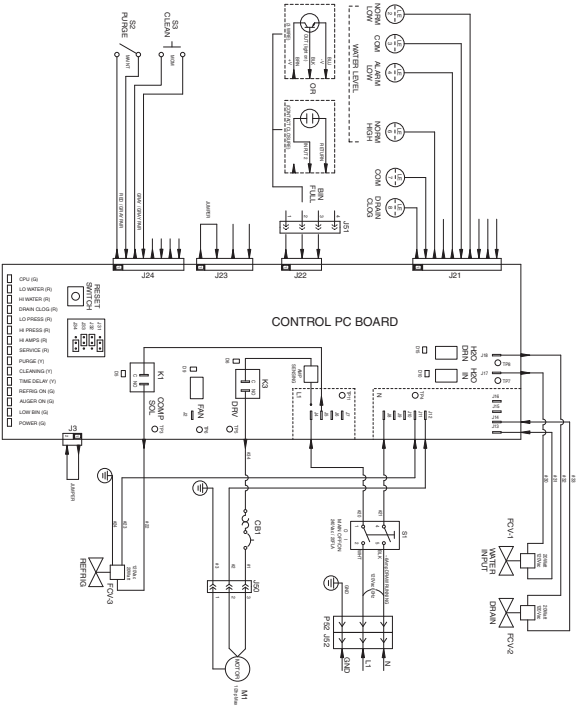
RN0400 230V/60HZ/1PH



RN1000/RN1400 AIR & WATER COOLED



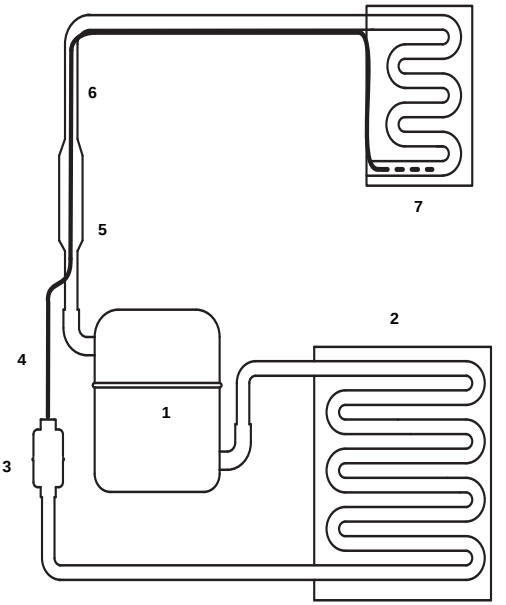
RN1000C/RN1200C QUIETQUBE HEAD SECTION



Refrigeration Tubing Schematics

Flake Models

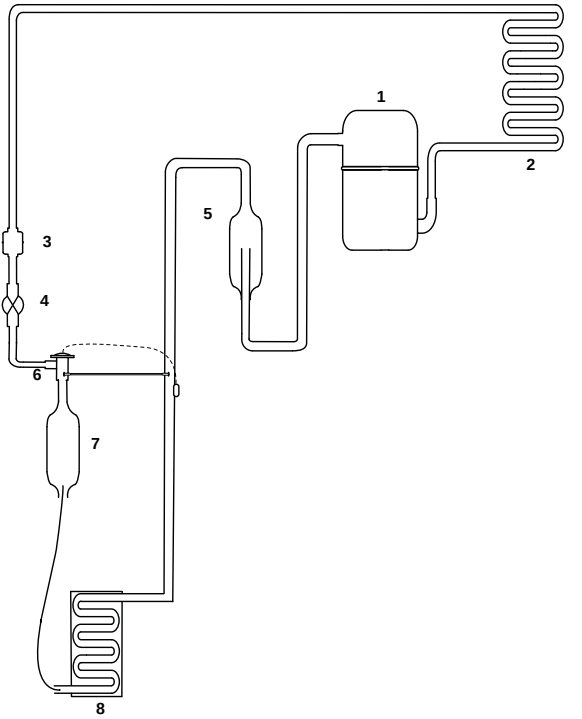
RF0244/RFS0244/RF0266/RF0300/RF0385/RF0388/ RF0399/RF0644/RF0650



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Capillary tube
5	Accumulator
6	Heat Exchanger
7	Evaporator

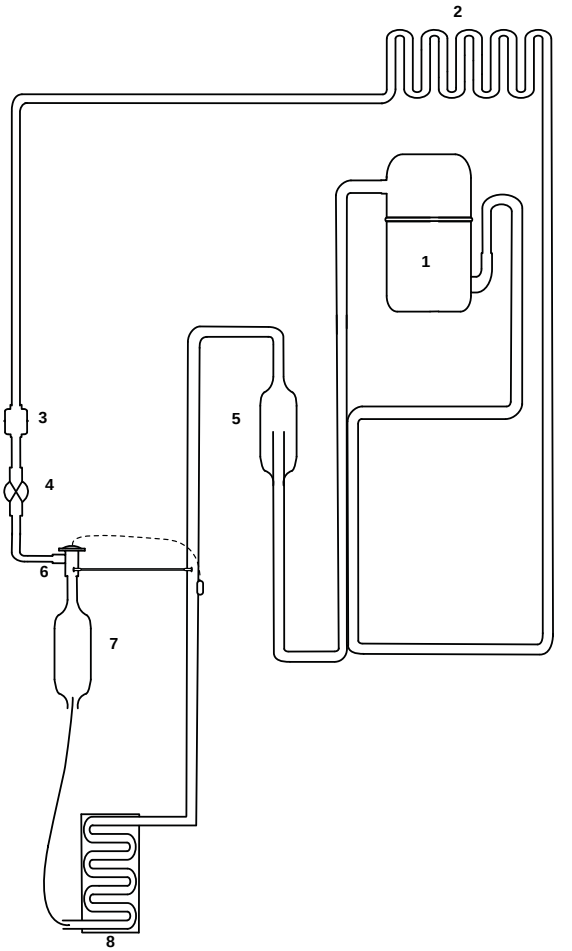
RF1200/RFS1200 AIR-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Liquid Line Solenoid Valve
5	Suction Accumulator
6	Thermostatic Expansion Valve
7	Liquid Accumulator
8	Evaporator

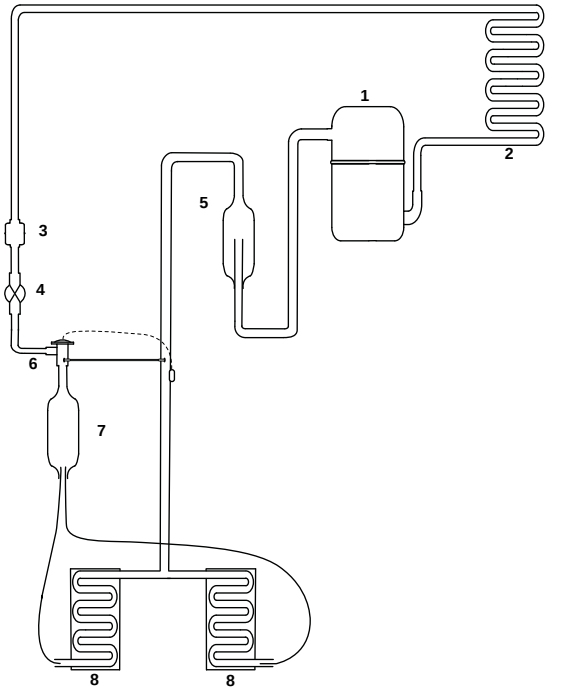
RF1200/RFS1200 WATER-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Liquid Line Solenoid Valve
5	Suction Accumulator
6	Thermostatic Expansion Valve
7	Liquid Accumulator
8	Evaporator

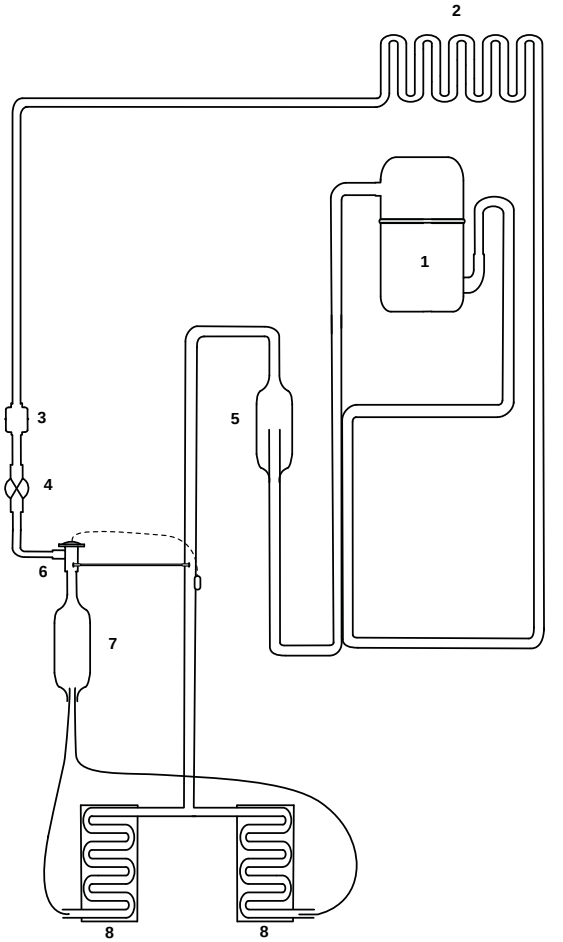
RF2300/RFS2300 AIR-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Liquid Line Solenoid Valve
5	Suction Accumulator
6	Thermostatic Expansion Valve
7	Liquid Accumulator
8	Evaporator

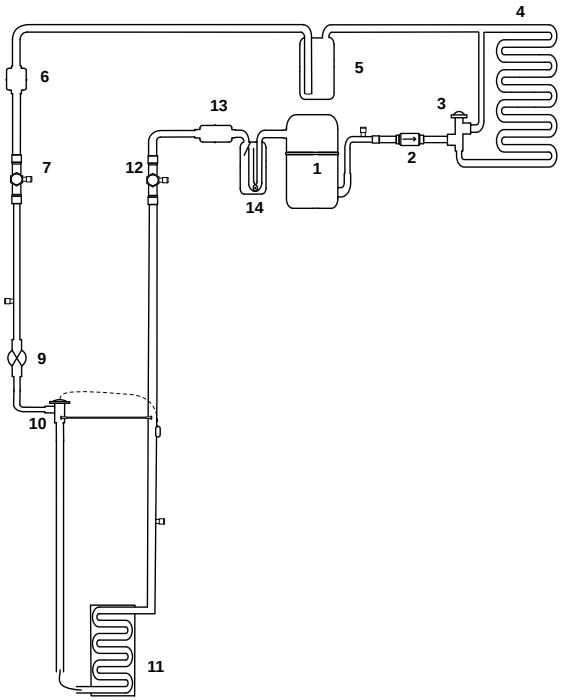
RF2300/RFS2300 WATER-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Liquid Line Solenoid Valve
5	Suction Accumulator
6	Thermostatic Expansion Valve
7	Liquid Accumulator
8	Evaporator

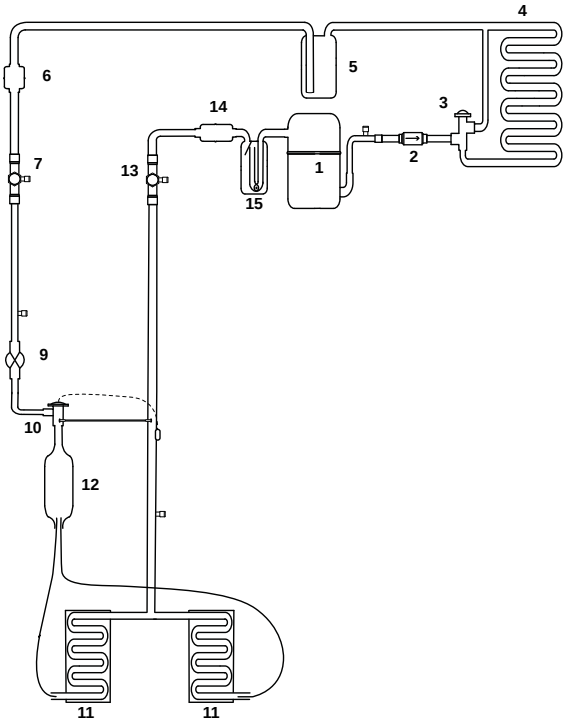
RF1200C/RFS1200C QUIETQUBE HEAD SECTION & RCU1075 CONDENSING UNIT



TUBING DIAGRAM LEGEND

1	Compressor
2	Check Valve
3	Head Pressure Control Valve
4	Condenser (air or water cooled)
5	Receiver
6	Condensing unit Liquid Line Drier
7	Liquid Line Shut-off Valve
8	Ice Machine Liquid Line Drier
9	Liquid Line Solenoid Valve
10	Thermostatic Expansion Valve
11	Evaporator
12	Suction Line Shut-off Valve
13	Suction Line Filter
14	Suction Accumulator

RF2300C/RFS2300 QUIETQUBE HEAD SECTION & RCU2375 CONDENSING UNIT

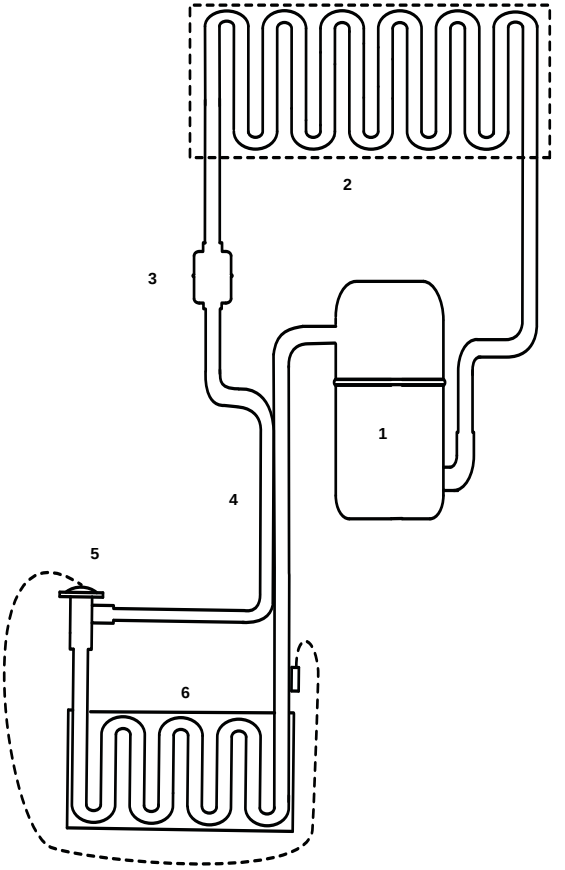


TUBING DIAGRAM LEGEND

1	Compressor
2	Check Valve
3	Head Pressure Control Valve
4	Condenser (air or water cooled)
5	Receiver
6	Condensing unit Liquid Line Drier
7	Liquid Line Shut-off Valve
8	Ice Machine Liquid Line Drier
9	Liquid Line Solenoid Valve
10	Thermostatic Expansion Valve
11	Evaporator
12	Liquid Accumulator
13	Suction Line Shut-off Valve
14	Suction Line Filter
15	Suction Accumulator

Nugget Models

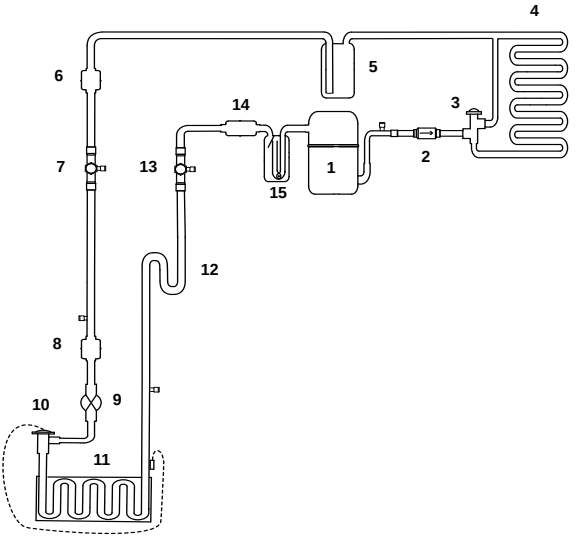
RNS0244/RNS0385/RN0400/RN1000/RN1400 AIR & WATER-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser (air or water cooled)
3	Liquid Line Drier
4	Heat Exchanger
5	Thermostatic Expansion Valve
6	Evaporator

RN1000C/RN1200C QUIETQUBE HEAD SECTION & RCU1075/RCU1275 CONDENSING UNIT



TUBING DIAGRAM LEGEND

1	Compressor
2	Check Valve
3	Head Pressure Control Valve
4	Condenser (air or water cooled)
5	Receiver
6	Condensing unit Liquid Line Drier
7	Liquid Line Shut-off Valve
8	Ice Machine Liquid Line Drier
9	Liquid Line Solenoid Valve
10	Thermostatic Expansion Valve
11	Evaporator
12	S Trap (20' + Rise Only)
13	Suction Line Shut-off Valve
14	Suction Line Filter
15	Suction Accumulator

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